5 Bay Storage with RAID, eSATA & Trays

DAS501t

User's Manual

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1 WELCOME

1.1 INTRODUCTION

DAS501t enhances your data storage by combining advanced RAID[1] features typically seen on high-end data systems with low cost/ high capacity Serial ATA drives. By using industry standard SATA drives and Silicon Image Host Bus Adapters, you can achieve extraordinarily low costs while remaining assured that your data is protected against hardware failure.

1.2 PRECAUTION

Please read the safe precautions carefully before you using DAS501t storage appliance. Ensure that you use the product correctly according to the procedure described in this guide.

The following safety precautions are intended to remind you to operate the product safely and correctly. Please read and ensure that you understand them before you proceed to the other sections of this guide.

- ⌘ Do not attempt to disassemble or alter any part of the product that is not describe in this guide.
- ⌘ Do not allow the product to come into contact with water or other liquids. In the event that water or other liquids enter the interior, immediately unplug the product from the computer. Continued use of the product may result in fire or electrical shock. Please consult your product distributor or the closest support center.
- ⌘ Do not handle the product near a heat source or expose them to direct flame or heat.
- ⌘ Never place the product in close to equipment generating storage electromagnetic fields. Exposure to strong magnetic fields may cause malfunctions or corrupt data.
- ⌘ Can't operate properly under Windows 3.x/ 95 / 98SE/ ME/ NT.
- ⌘ Hard disk drive is not including.

1.3 FEATURES

1.3.1 DATA SECURITY

The DAS501t software driver includes support for monitoring to predict suspect drives.

DAS501t provides our highest commitment to data security through the use of RAID architecture to back up and protect data. RAID levels 1, 10, and 5 provide data security. DAS501t supports sophisticated sparing support so that hardware failure risk can be minimized by automatically regenerating the failed disk's data on a backup disk. The DAS501t software driver includes support for Self- Monitoring Analysis and Reporting Technology (S.M.A.R.T.[2]) to predict disk failures. Drives can be moved between controllers without losing data.

[1] Redundant Array of Independent Devices, a method of combining drives to provide better protection and/or performance.

[2] Self Monitoring, Analysis and Reporting Testing.

1.3.2 DATA PERFORMANCE

The DAS501t can also increase storage throughput by combining the throughput of multiple drives into a single volume. RAID levels 1, 10, and 5 support this ability. Furthermore, each volume can be tailored to provide the best performance for the data contained on that disk.

1.3.3 DATA VERSATILITY

The DAS501t software driver also supports Contiguous and Concatenated drives for applications which do not require increased security or performance.

1.4 EASE OF USE

The DAS501t utility offers an easy to use utility for creating and managing your storage. It also supports the latest SATA enhancements including SATA-II Port Multiplier support, and up to 3Gbit/sec transfer rates on controllers that support that speed. Creating and deleting volumes is also possible without requiring a restart of the operating system and rebuilds never require the data to be taken off-line.
Drives can also be moved between controllers without losing the data.

1.5 SPECIFICATIONS

- ⌘ A single eSATA host port to 5 SATA 3.5-inch hard disks, with HDD trays & door cover.
- ⌘ Power LED, and devices status and activity LED (on the HDD trays).
- ⌘ Metal chassis (SECC) and plastic panel frame (ABS) with HDD trays (SECC and ABS) design.
- ⌘ 135 (W) x 180 (H) x 255 (D) mm, NW: 2.7 Kgs, GW: 3.1Kgs.
- ⌘ Design based on the Silicon Image SiI3726 Port-Multiplier with SiI3132R5 PCI-Express 1X HBA.
- ⌘ Support Striped (RAID 0), Mirrored (RAID 1), Mirrored Striped (RAID 10), Parity RAID (RAID 5) modes, and hot spare on Mirrored (RAID 1), Mirrored Striped (RAID 10) and Parity RAID (RAID 5) modes.
- ⌘ Support Contiguous (Single Drive) & Concatenation (Combine Drives) modes.
- ⌘ 220 watts, 103 to 253Vac / 47~63Hz with CE/ FCC/ UL-1950/ C-UL/TUV/ CB requirement.
- ⌘ Single packing (color box with handle) and 4 in 1 outer box.

1.6 SYSTEMS REQUIREMENTS

1.6.1 PC SYSTEMS

- Intel Pentium-III 500MHz equivalent or faster
- Windows 2000, XP, 2003 Server or Windows Vista with the latest Service Packs
- CD-ROM drive
- 64 MB of RAM (minimum)
- 250 MB of free disk space
- Super VGA (800 x 600) or higher resolution display with at least 256 colors
- Mouse or compatible pointing device
- SATA connection: Host Bus Adapter card (controller number Sii3124 or Sii3132) and associated software drivers with Port Multiplier support

1.6.2 MACINTOSH SYSTEMS

• PowerMac G5, MacBook Pro or Mac Pro
• MacOS X, 10.4.8 (or later)
• CD-ROM drive
• Mouse or compatible pointing device
• SATA connection: Host Bus Adapter card (controller number Sii3124 or Sii3132) and associated software drivers with Port Multiplier support

1.7 PRODUCT CONTENTS

The following parts are content.

⌘ DAS501t x 1
⌘ SiI3132R5 PCI-Express 1X HBA x 1
⌘ eSATA Cable x 1
⌘ Power Cable x 1
⌘ HDD Screw x 20
⌘ Setup and Installation Driver Repository CD x 1

2 AN INTRODUCTION TO RAID

2.1 RAID VOLUMES

RAID technology allows one or more disks to be combined into a logical volume which provides greater performance and/or protection than standard disk drives. These volumes, also known as RAID Groups, appear like regular disk drives to the operating system and can be partitioned, formatted and used just like any other normal disk. The complexity of the RAID is hidden within the driver.

There are several different methods of combining disks, each with its own advantages and disadvantages. Each method is referred to as a RAID "level" such as RAID 1, or RAID 5. The details of each level are summarized below and detailed in the following sections.

RAID LEVEL	CONFIGURED AS	ADVANTAGES	DISADVANTAGES
0	Striped	Excellent performance, low cost	No data protection
1	Mirrored	Excellent data protection	High cost
10	Mirrored Striped	High performance, excellent data protection.	High cost.
5	Parity RAID	Good data protection, good value	Some performance degradation for writes.
Combination	Concatenated	Good performance, low cost, large Volume size	No data protection
Single Drive / Segment	Contiguous	Same as single disk	Same as single disk

2.2 SEGMENTING DISKS

For increased versatility, the SATARAID5 software allows individual disks to be divided into smaller segments which can then be combined into different volumes. As an example, if a user has one set of data that must be protected at all costs, another set of data which should be protected at reasonable cost and another set that

doesn't need any protection at all; the user can divide three disks into sections as shown in Figure 1. The yellow regions define the high security volume, the greem section is the middle security volume and the light blue shows the unprotected area.

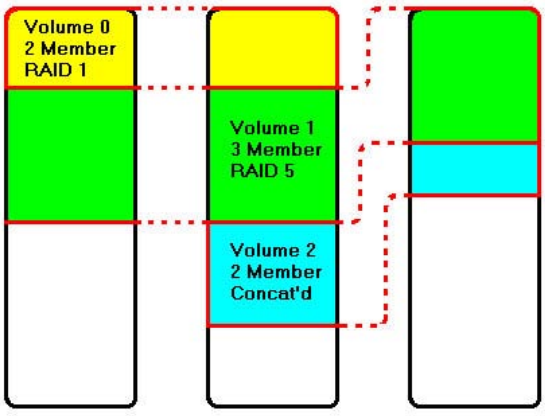
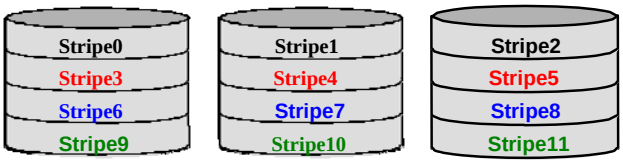


Figure 1: Dividing Disks into Members

2.3 RAID LEVELS

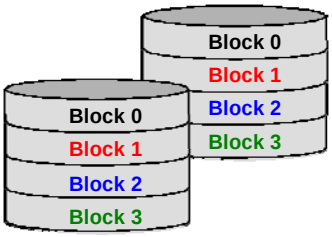
2.3.1 DISK STRIPING (RAID 0)

Striping is a performance-oriented, non-redundant data mapping technique. While Striping is discussed as a RAID Group type, it is does not provide any fault tolerance. With modern SATA and ATA bus mastering technology, multiple I/O operations can be performed in parallel, enhancing data throughput. Striping arrays use multiple disks to form a larger virtual disk. The figure below illustrates a three-disk stripe set. Stripe one is written to disk one, stripe two to disk two, and so forth. RAID 0 sets can be comprised of two, three, or four drives. If the sizes of the disk segments are different, the smallest disk segment will limit the overall size of the RAID Group.



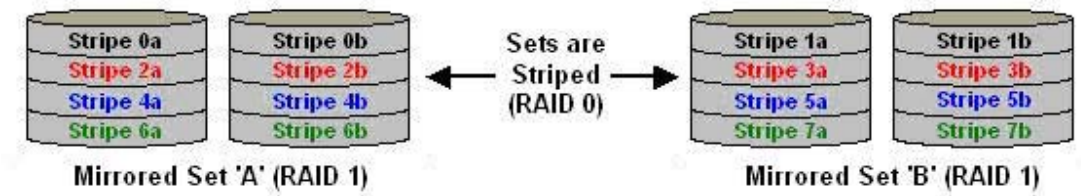
2.3.2 DISK MIRRORING (RAID 1)

Disk mirroring creates an identical twin for a selected disk by having the data simultaneously written to two disks. This redundancy provides instantaneous protection from a single disk failure. If a read failure occurs on one drive, the system reads the data from the other drive. RAID 1 sets are comprised of two drives, and a third drive can be allocated as a spare in case one of the drives in the set fails. If the sizes of the disk segments are different, the smallest disk segment will limit the overall size of the RAID Group.



2.3.3 DISK MIRRORING AND STRIPING (RAID 10)

RAID 10 combines the features of both RAID 0 and RAID 1. Performance is provided through the use of Striping (RAID 0), while adding the fault tolerance of Mirroring (RAID 1). The implementation of RAID 10 requires four drives. The drives are assigned as two sets of striped pairs.



The data is written to RAID Group A, which is mirrored (RAID 1) and provides data redundancy. Alternating blocks of data are then striped across another RAID 1 mirrored set, shown as Set B in the figure above. This provides improved speed.

Under certain circumstances, a RAID 10 set can sustain multiple simultaneous drive failures.

2.3.4 PARITY RAID (RAID 5)

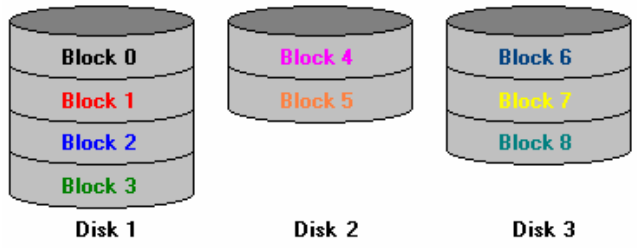
Parity or RAID 5 adds fault tolerance to Disk Striping by including parity information with the data. Parity RAID dedicates the equivalent of one disk for storing parity stripes. The data and parity information is arranged on the disk array so that parity is written to different disks. There are at least 3 members to a Parity RAID set. The following example illustrates how the parity is rotated from disk to disk. The following example illustrates how the parity is rotated from disk to disk.

Parity RAID uses less capacity for protection and is the preferred method to reduce the cost per megabyte for larger installations. Mirroring requires 100% increase in capacity to protect the data whereas the above example using three hard drives only requires a 50% increase. The additional required capacity decreases as the number of disks in the group increases (i.e., 33% for four drives or 25% for five drives).

In exchange for low overhead necessary to implement protection, Parity RAID degrades performance for all write operations. The parity calculations for Parity RAID may result in write performance that is somewhat slower than the write performance to a single disk.

2.3.5 CONCATENATION (COMBINE DRIVE)

The Concatenated mode combines multiple disks or segments of disks into a single large volume. It does not provide any data protection or performance improvement but can be useful for utilizing leftover space on disks. Concatenation allows the segments that make up the volume to be of different sizes.



2.3.6 SINGLE DRIVE / SEGMENT

The single drive is a virtual disk that can either be an entire disk drive or a segment of a single disk drive. Single drive is the “Contiguous” configuration option when creating RAID Groups (or sets) in the SATARAID5 software.

2.4 RAID VOLUME STATUS

A RAID volume can be in any one of the following statuses.

STATUS	MEANING
Good	All disks are currently functioning as normal.
Reduced	For RAID levels that provide data protection, one or more disks have failed but the data is still available via the RAID algorithms. The failed disk should be replaced as soon as possible to avoid loss of data.
Rebuilding	A failed disk drive has been replaced and the data is being regenerated on the replacement disk. When complete, the RAID Group will return to Good status.
Resynchronizing	An error has occurred and RAID algorithms be regenerated on this RAID Group. When complete, the RAID Group will return to Good status.
Failed	One or more disks have failed and RAID algorithms can no longer regenerate the data. The minimum number of failures required to reach this state depends on the RAID level: ⌘ RAID 0, Concatenated, Contiguous: Single disk failure. ⌘ RAID 1, 10, and 5: Two disk failure.

3 INSTALLATION

3.1 COMPONENTS

There are three separate steps that must be install or setup for DAS501t to function. These components are the HARDWARE, SATA RAID5 HBA DRIVER, and SATARAID5 Utility. The steps on how to setup these packages is described in the following sections.

3.2 INSTALLING HARDWARE

Follow the descriptions below, and step by step to complete the installation.

- ⌘ Turn off your host computer.
- ⌘ Install the SiI3132 PCI-Express 1X SATA RAID5 HBA into a PCI-Express slot (1X ~ 16X), than connect one end of the eSATA cable to the eSATA connector on the Sil3132 PCI-Express 1X SATA RAID5 HBA.
- ⌘ Connect the other end to the eSATA connecter on DAS501T.
- ⌘ If hard disk drives are not installed in DAS501t, insert the drives into the trays (the round srew hole is the drive positioner), than insert the trays most of the way to bay 1 to 5 in order (from the bottom to top); gently insert the tray until the drive is fully inserted, and shut to seat the tray handle securely.
- ⌘ Attach one end of the AC power cord to DAS501t and the other end to the proper AC receptacle.
- ⌘ Turn on DAS501t, than turn on the host computer.

3.3 INSTALLING ON WINDOWS 2000

3.3.1 INSTALLING SATA RAID HOST BUS ADAPTER

Follow the descriptions below, and step by step to complete the setup.

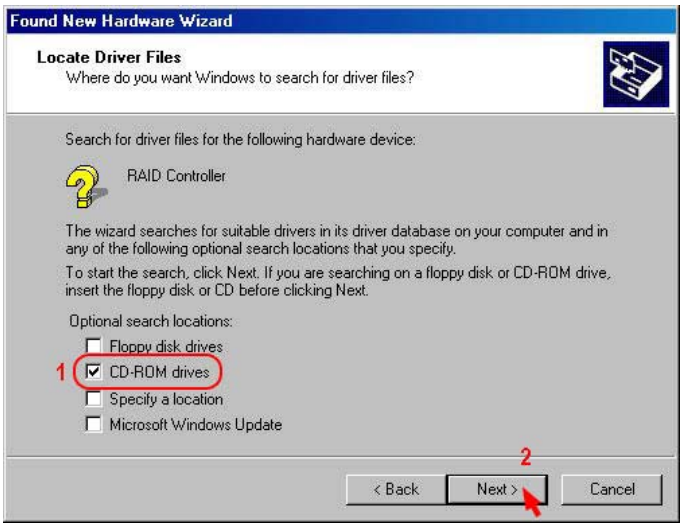
- ⌘ Insert the Setup and Installation Driver Repository CD in the CD-ROM drive.
- ⌘ When start the Windows O/S, new hardware will be found, click **Next**.

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install a device driver for a hardware device.
To continue, click Next.
< Back
Next >
Cancel

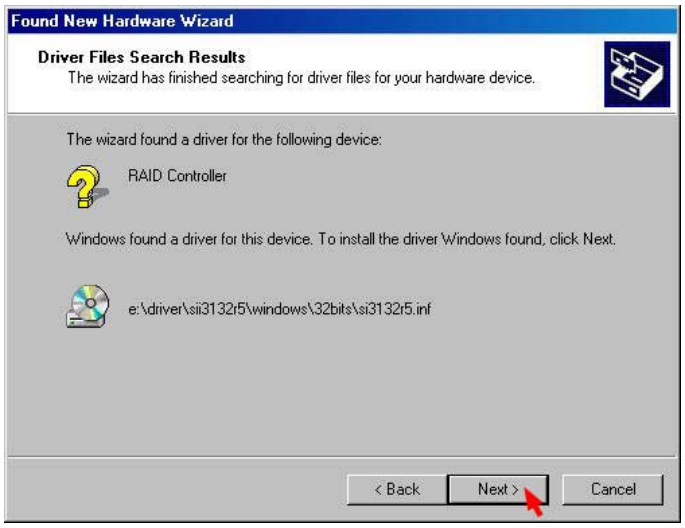
⌘ Select **Search for a suitable driver for my device (recommended)**, than click **Next**.

Found New Hardware Wizard
Install Hardware Device Drivers
A device driver is a software program that enables a hardware device to work with an operating system.
This wizard will complete the installation for this device:
RAID Controller
A device driver is a software program that makes a hardware device work. Windows needs driver files for your new device. To locate driver files and complete the installation click Next.
What do you want the wizard to do?
1
Search for a suitable driver for my device (recommended)
Display a list of the known drivers for this device so that I can choose a specific driver
2
< Back
Next >
Cancel

⌘ Select **CD-ROM drives**, than click **Next**.


Found New Hardware Wizard
Locate Driver Files
Where do you want Windows to search for driver files?
Search for driver files for the following hardware device:
RAID Controller
The wizard searches for suitable drivers in its driver database on your computer and in any of the following optional search locations that you specify.
To start the search, click Next. If you are searching on a floppy disk or CD-ROM drive, insert the floppy disk or CD before clicking Next.
Optional search locations:
Floppy disk drives
1
CD-ROM drives
Specify a location
Microsoft Windows Update
2
< Back
Next >
Cancel

⌘ Click **Next** to search the driver of RAID Controller.


Found New Hardware Wizard
Driver Files Search Results
The wizard has finished searching for driver files for your hardware device.
The wizard found a driver for the following device:
RAID Controller
Windows found a driver for this device. To install the driver Windows found, click Next.
e:\driver\sii3132r5\windows\32bits\si3132r5.inf
< Back
Next >
Cancel

⌘ When the RAID Controller installation has completed, click **Finish**, and begin to the **Pseudo SCSI Processor Device** installation.

Found New Hardware Wizard
Completing the Found New Hardware Wizard
Silicon Image Sil 3132 SoftRaid 5 Controller
Windows has finished installing the software for this device.
To close this wizard, click Finish.
< Back
Finish
Cancel

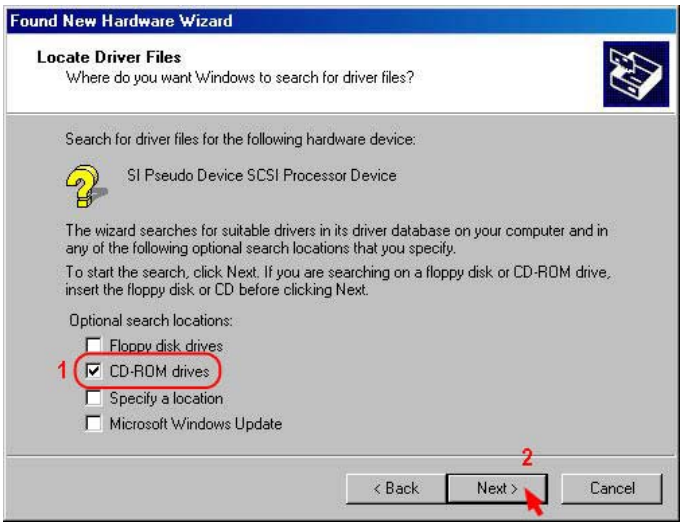
⌘ Windows will find the **Pseudo SCSI Processor Device** hardware, click **Next**.

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install a device driver for a hardware device.
To continue, click Next.
< Back
Next >
Cancel

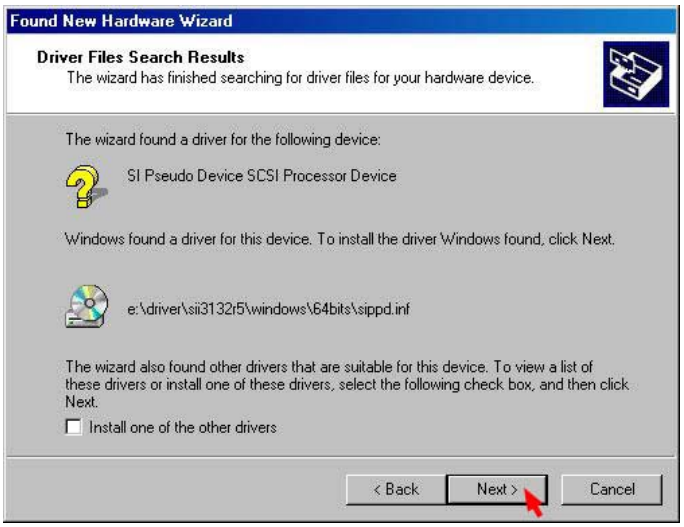
⌘ Select **Search for a suitable driver for my device (recommended)**, than click **Next**.

Found New Hardware Wizard
Install Hardware Device Drivers
A device driver is a software program that enables a hardware device to work with an operating system.
This wizard will complete the installation for this device:
SI Pseudo Device SCSI Processor Device
A device driver is a software program that makes a hardware device work. Windows needs driver files for your new device. To locate driver files and complete the installation click Next.
What do you want the wizard to do?
1
Search for a suitable driver for my device (recommended)
Display a list of the known drivers for this device so that I can choose a specific driver
2
< Back
Next >
Cancel

⌘ Select **CD-ROM drives**, than click **Next**.


Found New Hardware Wizard
Locate Driver Files
Where do you want Windows to search for driver files?
Search for driver files for the following hardware device:
SI Pseudo Device SCSI Processor Device
The wizard searches for suitable drivers in its driver database on your computer and in any of the following optional search locations that you specify.
To start the search, click Next. If you are searching on a floppy disk or CD-ROM drive, insert the floppy disk or CD before clicking Next.
Optional search locations:
Floppy disk drives
1
CD-ROM drives
Specify a location
Microsoft Windows Update
2
< Back
Next >
Cancel

⌘ Click **Next** to install the **Pseudo SCSI Processor Device** driver.


Found New Hardware Wizard
Driver Files Search Results
The wizard has finished searching for driver files for your hardware device.
The wizard found a driver for the following device:
SI Pseudo Device SCSI Processor Device
Windows found a driver for this device. To install the driver Windows found, click Next.
e:\driver\sii3132r5\windows\64bits\sippd.inf
The wizard also found other drivers that are suitable for this device. To view a list of these drivers or install one of these drivers, select the following check box, and then click Next.
Install one of the other drivers
< Back
Next >
Cancel

⌘ When the **Pseudo SCSI Processor Device** installation has completed, click **Finish**.

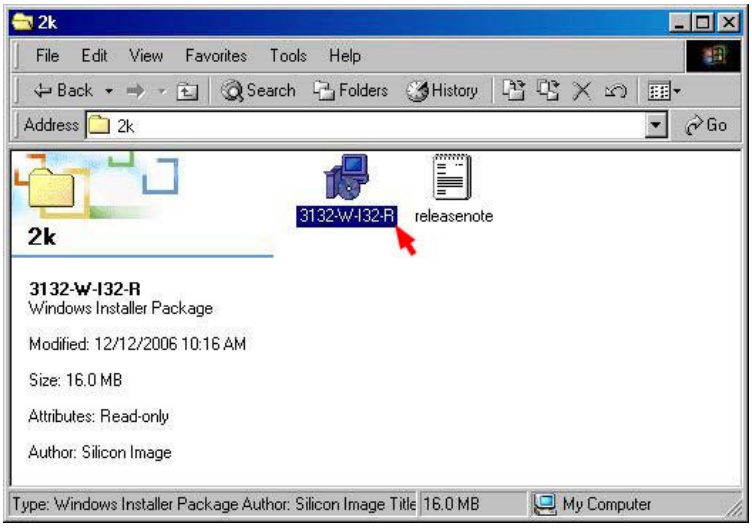
Found New Hardware Wizard
Completing the Found New Hardware Wizard
Silicon Image's Pseudo Processor Device
Windows has finished installing the software for this device.
To close this wizard, click Finish.
< Back
Finish
Cancel

3.3.2 INSTALLING SATARAID5 UTILITY

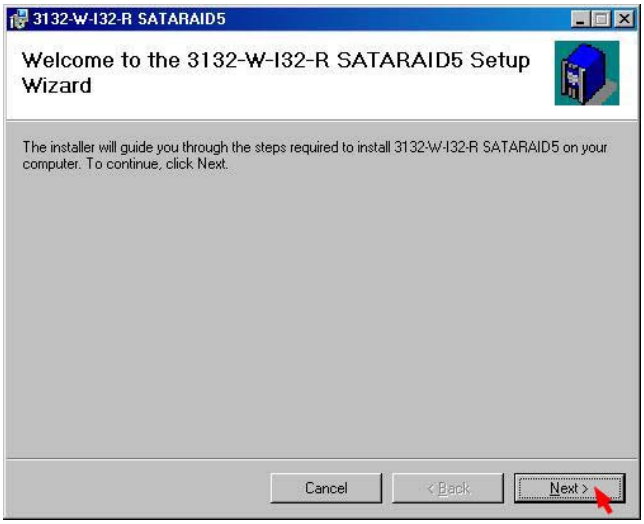
Follow the descriptions below, and step by step to complete the installation.

⌘ Open the Setup and Installation Driver Repository CD and select the SATARAID5 Array Manager software from the Utility folder.

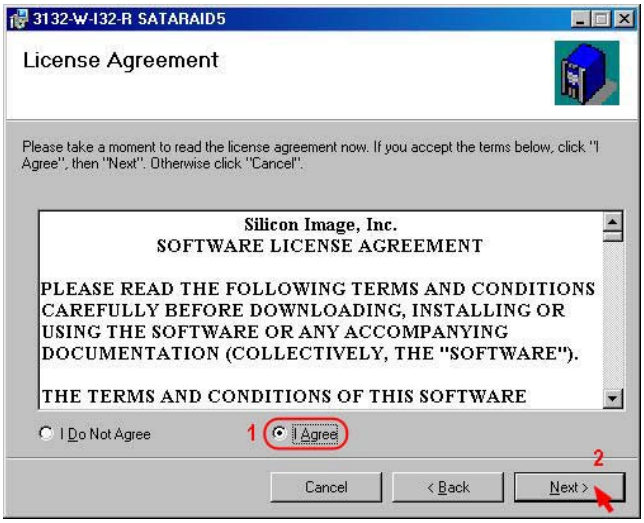
⌘ Double-click the **3132-W-I32-R.msi** file (Located at: E:\ Utility\SiI3132R5\Windows\2k\3132-W-I32-R.msi; PS: "E:" = CD-ROM drive letter).



⌘ Click **Next** to begin setup.

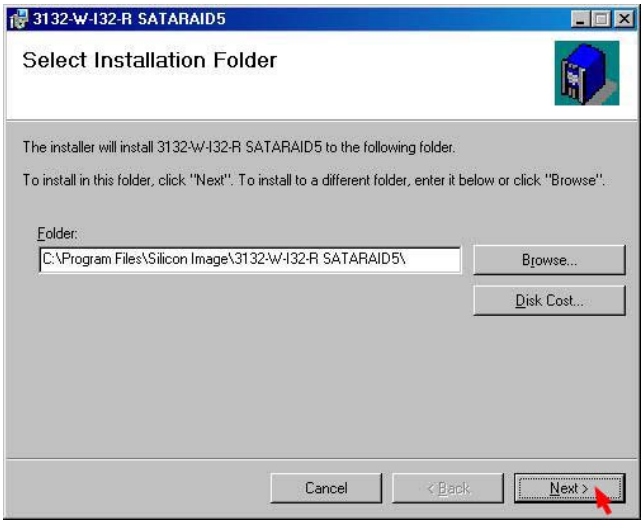

3132-W-I32-R SATARAID5
Welcome to the 3132-W-I32-R SATARAID5 Setup Wizard
The installer will guide you through the steps required to install 3132-W-I32-R SATARAID5 on your computer. To continue, click Next.
Cancel
< Back
Next >

⌘ Select **I Agree**, than click **Next**.

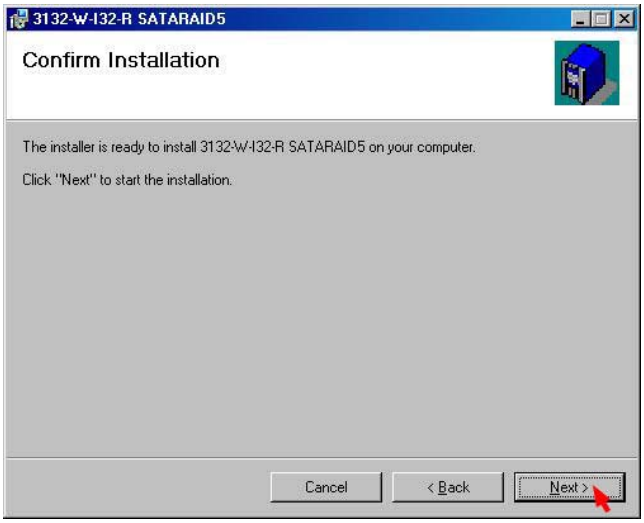

3132-W-I32-R SATARAID5
License Agreement
Please take a moment to read the license agreement now. If you accept the terms below, click "I Agree", then "Next". Otherwise click "Cancel".
Silicon Image, Inc.
SOFTWARE LICENSE AGREEMENT
PLEASE READ THE FOLLOWING TERMS AND CONDITIONS CAREFULLY BEFORE DOWNLOADING, INSTALLING OR USING THE SOFTWARE OR ANY ACCOMPANYING DOCUMENTATION (COLLECTIVELY, THE "SOFTWARE").
THE TERMS AND CONDITIONS OF THIS SOFTWARE
I Do Not Agree
1
I Agree
2
Cancel
< Back
Next >

⌘ Select **Place shortcut on Desktop**, than click **Next**.

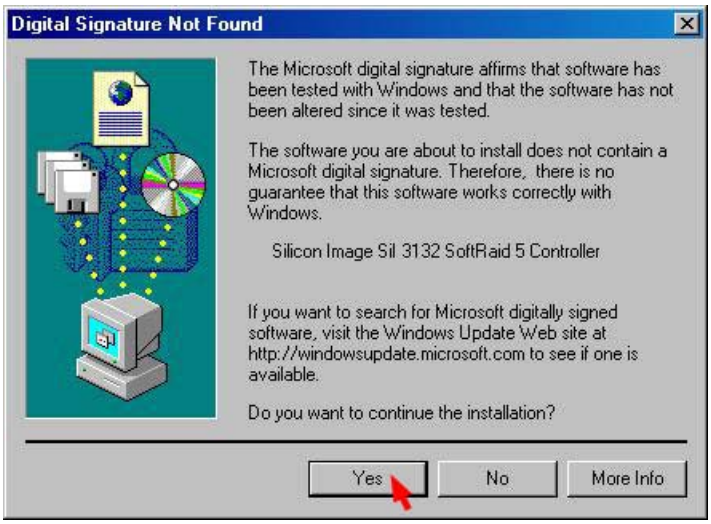
⌘ Click **Next** to use the default installation folder.


3132-W-I32-R SATARAID5
Select Installation Folder
The installer will install 3132-W-I32-R SATARAID5 to the following folder.
To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".
Folder:
C:\Program Files\Silicon Image\3132-W-I32-R SATARAID5\
Browse...
Disk Cost...
Cancel
< Back
Next >

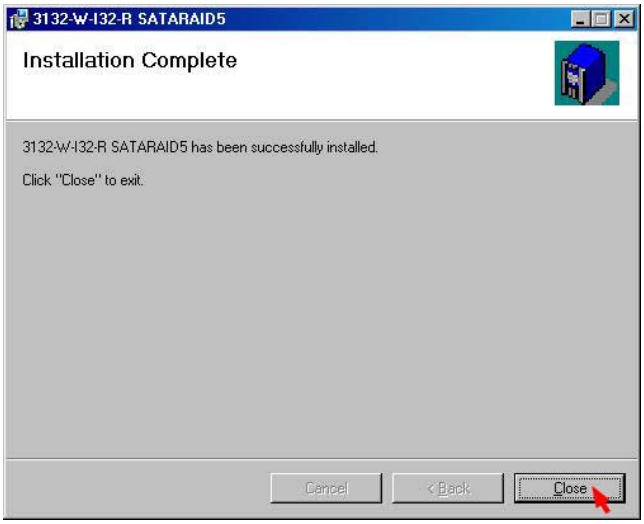
⌘ Click **Next** to begin the installation.


3132-W-I32-R SATARAID5
Confirm Installation
The installer is ready to install 3132-W-I32-R SATARAID5 on your computer.
Click "Next" to start the installation.
Cancel
< Back
Next >

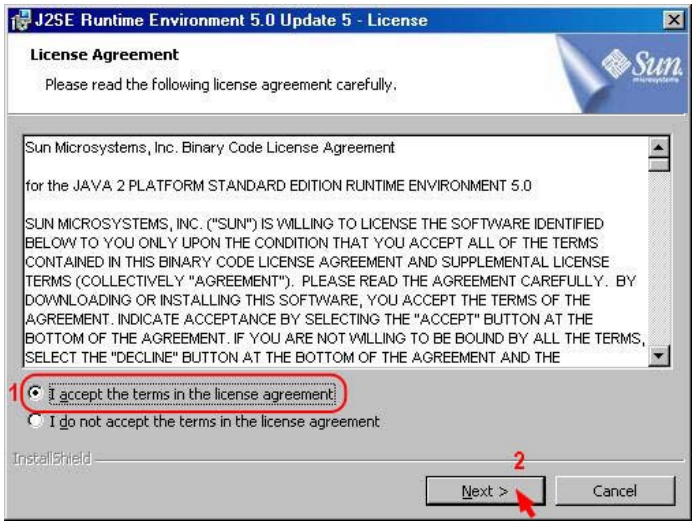
⌘ When **Digital Signature Not Found** message pop-out, click **Yes** to continue the installation.


Digital Signature Not Found
The Microsoft digital signature affirms that software has been tested with Windows and that the software has not been altered since it was tested.
The software you are about to install does not contain a Microsoft digital signature. Therefore, there is no guarantee that this software works correctly with Windows.
Silicon Image Sil 3132 SoftRaid 5 Controller
If you want to search for Microsoft digitally signed software, visit the Windows Update Web site at http://windowsupdate.microsoft.com to see if one is available.
Do you want to continue the installation?
Yes
No
More Info

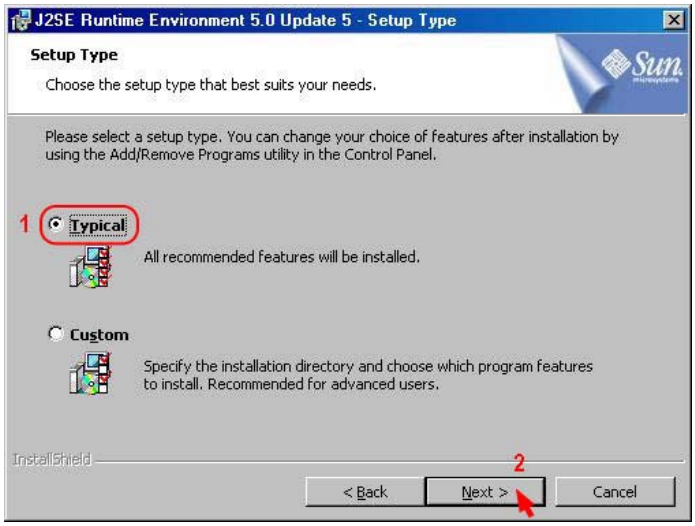
⌘ When the SATARAID5 Utility installation has completed, click **Close**, and begin to the **Java platform** installation.



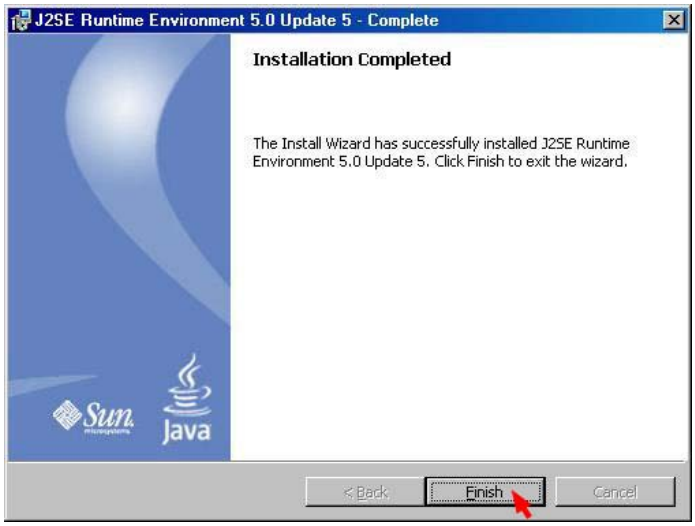
⌘ Select **I accept the terms in the license agreement**, than click **Next**.


J2SE Runtime Environment 5.0 Update 5 - License
License Agreement
Please read the following license agreement carefully.
Sun Microsystems, Inc. Binary Code License Agreement
for the JAVA 2 PLATFORM STANDARD EDITION RUNTIME ENVIRONMENT 5.0
SUN MICROSYSTEMS, INC. ("SUN") IS WILLING TO LICENSE THE SOFTWARE IDENTIFIED BELOW TO YOU ONLY UPON THE CONDITION THAT YOU ACCEPT ALL OF THE TERMS CONTAINED IN THIS BINARY CODE LICENSE AGREEMENT AND SUPPLEMENTAL LICENSE TERMS (COLLECTIVELY "AGREEMENT"). PLEASE READ THE AGREEMENT CAREFULLY. BY DOWNLOADING OR INSTALLING THIS SOFTWARE, YOU ACCEPT THE TERMS OF THE AGREEMENT. INDICATE ACCEPTANCE BY SELECTING THE "ACCEPT" BUTTON AT THE BOTTOM OF THE AGREEMENT. IF YOU ARE NOT WILLING TO BE BOUND BY ALL THE TERMS, SELECT THE "DECLINE" BUTTON AT THE BOTTOM OF THE AGREEMENT AND THE
1
I accept the terms in the license agreement
I do not accept the terms in the license agreement
InstallShield
2
Next >
Cancel

⌘ Select **Typical**, than click **Next**.


J2SE Runtime Environment 5.0 Update 5 - Setup Type
Setup Type
Choose the setup type that best suits your needs.
Please select a setup type. You can change your choice of features after installation by using the Add/Remove Programs utility in the Control Panel.
1
Typical
All recommended features will be installed.
Custom
Specify the installation directory and choose which program features to install. Recommended for advanced users.
InstallShield
2
< Back
Next >
Cancel

⌘ When Java platform installation has completed, click **Finish** to exit.


J2SE Runtime Environment 5.0 Update 5 - Complete
Installation Completed
The Install Wizard has successfully installed J2SE Runtime Environment 5.0 Update 5. Click Finish to exit the wizard.
Sun
Java
< Back
Finish
Cancel

⌘ Select **Start** > **Programs** > **Silicon Image** > **SATARaid5Manager** to start the Array Manager software.

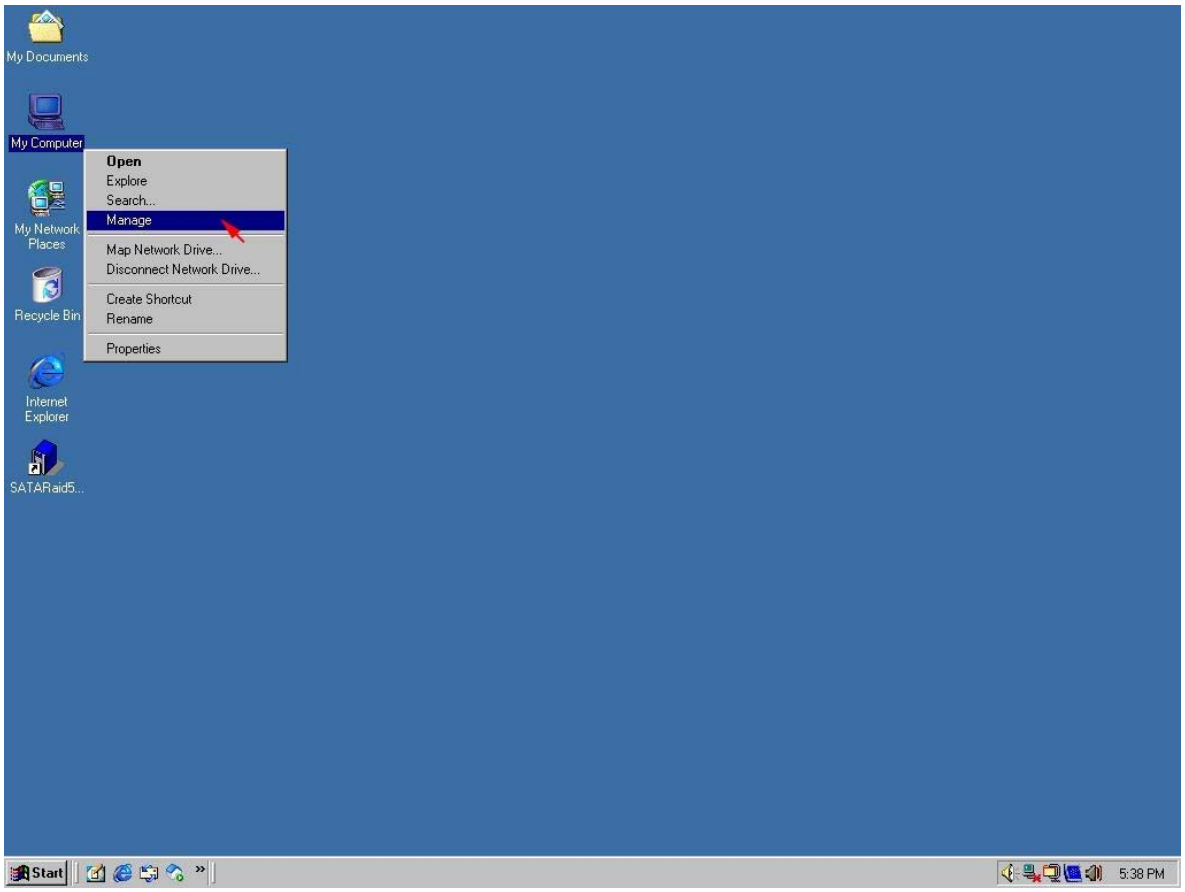
3.3.3 DISK DRIVE MODE SETUP

Please refer to the chapter 4.

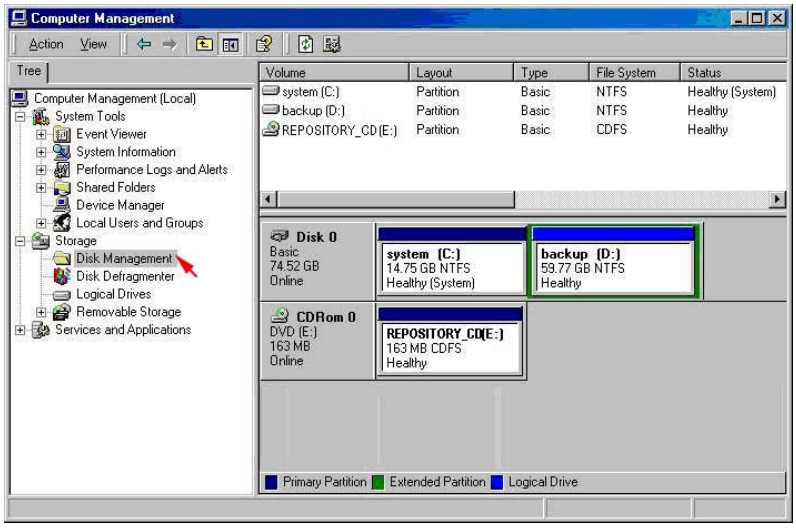
3.3.4 ALLOCATING PARTITION

Before creating any partitions, RAID groups must first be created using the SATARaid5Manager utility. Once the sets have been created, allow the system to load Windows.

⌘ Right-click on **My Computer** icon and select **Manage** from the pop-up menu.



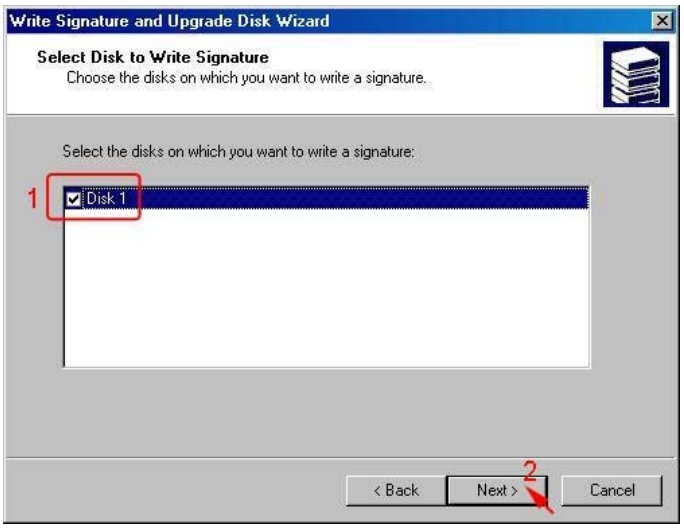
⌘ Select **Disk Management** under **Storage** to view the disk drives.



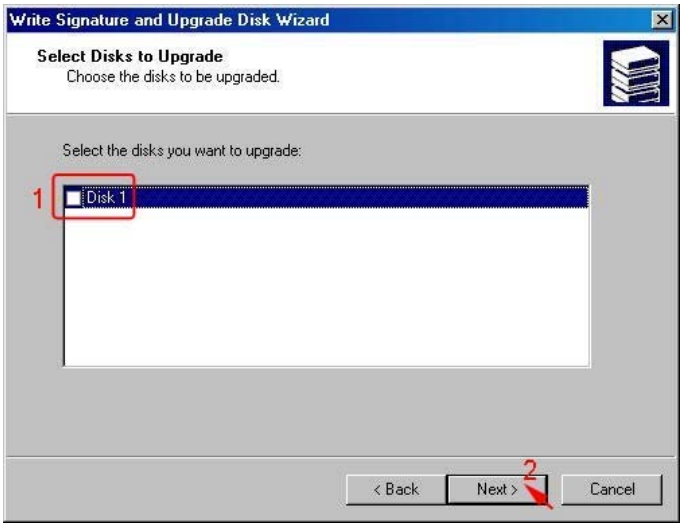
⌘ When **Write Signature and Upgrade Disk Wizard** appears, click **Next**.

Write Signature and Upgrade Disk Wizard
Welcome to the Write Signature and Upgrade Disk Wizard.
This wizard writes signatures on new disks, and upgrades empty basic disks to dynamic disks.
You can use dynamic disks to create software-based RAID volumes, which can be mirrored and striped or spanned across disks. You can also expand single-disk and spanned volumes without having to restarting the computer.
After you upgrade a disk, you cannot use earlier versions of Windows on any volume on that disk.
To continue, click Next.
Do not show this wizard again
Next >
Cancel

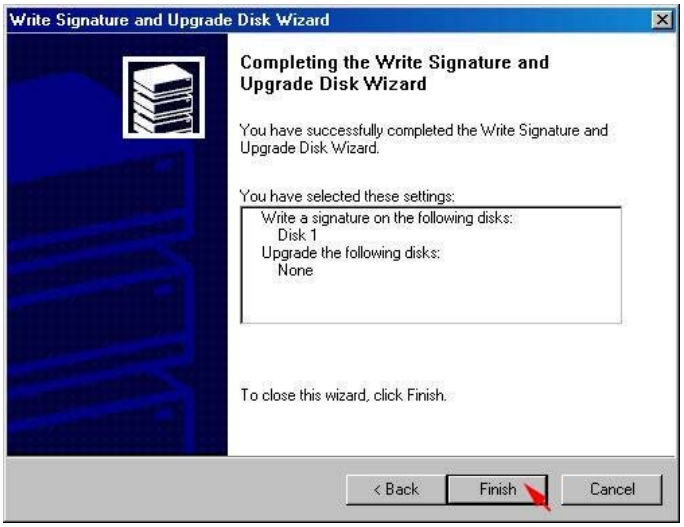
⌘ Select the new disk to write a signature, than click **Next**.


Write Signature and Upgrade Disk Wizard
Select Disk to Write Signature
Choose the disks on which you want to write a signature.
Select the disks on which you want to write a signature:
1
Disk 1
2
< Back
Next >
Cancel

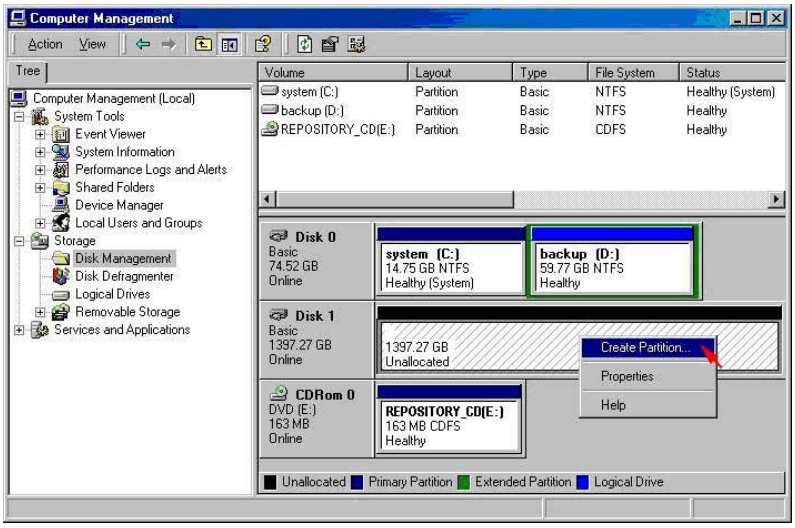
⌘ Do not click any disk to upgrade to dynamic disk, than click **Next**.



⌘ When the **Write Signature and Upgrade Disk Wizard** has completed, click **Finish**.


Write Signature and Upgrade Disk Wizard
Completing the Write Signature and Upgrade Disk Wizard
You have successfully completed the Write Signature and Upgrade Disk Wizard.
You have selected these settings:
Write a signature on the following disks:
Disk 1
Upgrade the following disks:
None
To close this wizard, click Finish.
< Back
Finish
Cancel

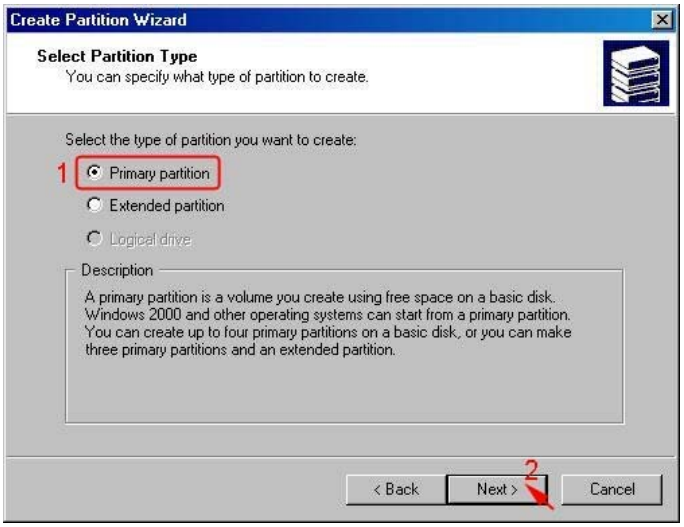
⌘ Right-click on the **Unallocated** partition and select **Create Partition…** from the pop-up menu.



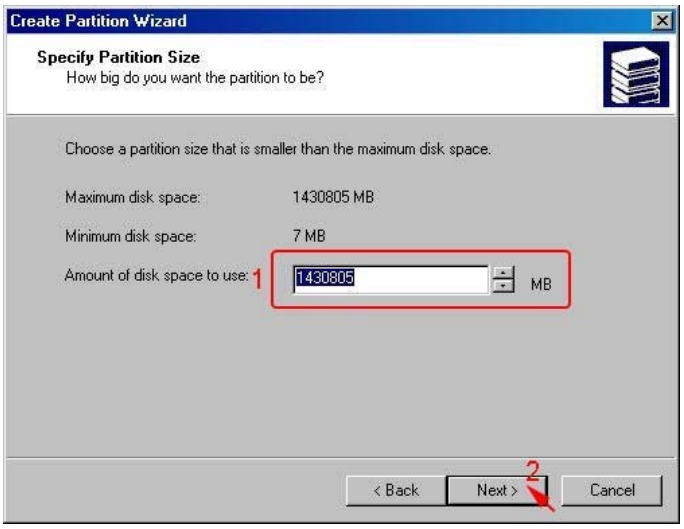
⌘ Click **Next** to create a partition on a basic disk.

Create Partition Wizard
Welcome to the Create Partition Wizard
This wizard helps you create a partition on a basic disk.
A basic disk is a physical disk that contains primary partitions, extended partitions, and logical drives. A basic disk may also contain volumes created with Windows NT 4.0 and earlier. You can also use MS-DOS to gain access to partitions on basic disks.
To continue, click Next.
< Back
Next >
Cancel

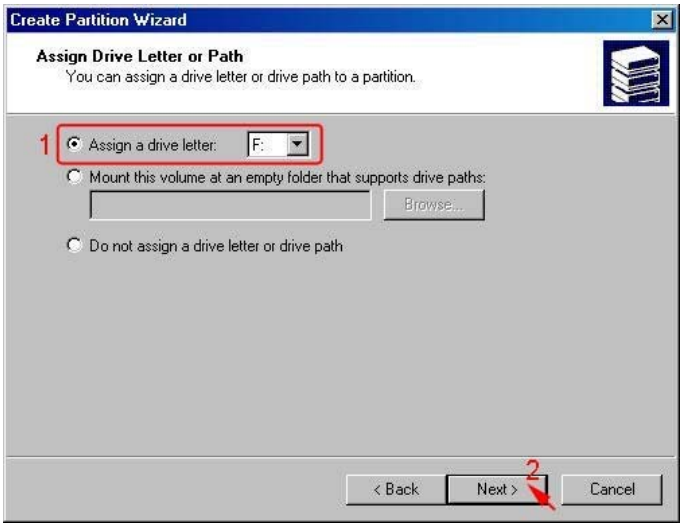
⌘ Select the partition type you want to create, than click **Next**.


Create Partition Wizard
Select Partition Type
You can specify what type of partition to create.
Select the type of partition you want to create:
1
Primary partition
Extended partition
Logical drive
Description
A primary partition is a volume you create using free space on a basic disk. Windows 2000 and other operating systems can start from a primary partition. You can create up to four primary partitions on a basic disk, or you can make three primary partitions and an extended partition.
< Back
Next >
2
Cancel

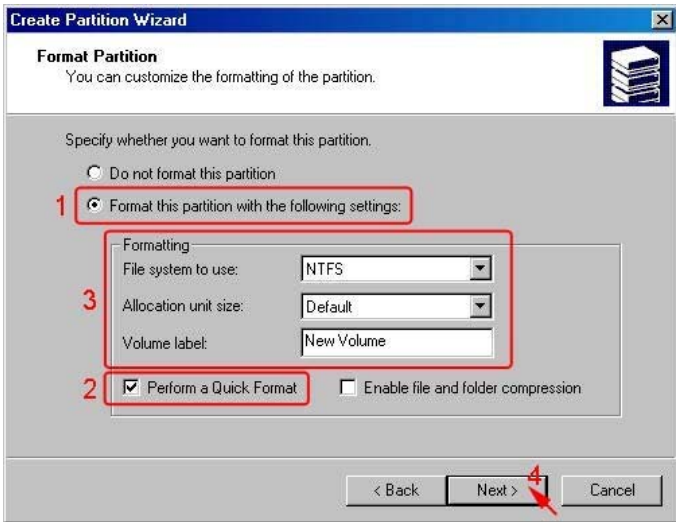
⌘ Specify the partition size you want to create, than click **Next**.



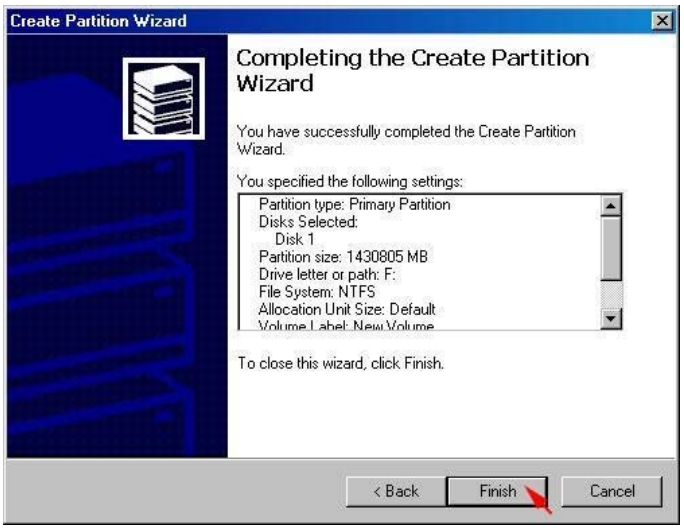
⌘ Assign the drive letter or path you want to create, than click **Next**.


Create Partition Wizard
Assign Drive Letter or Path
You can assign a drive letter or drive path to a partition.
1
Assign a drive letter:
F:
Mount this volume at an empty folder that supports drive paths:
Browse...
Do not assign a drive letter or drive path
< Back
Next >
2
Cancel

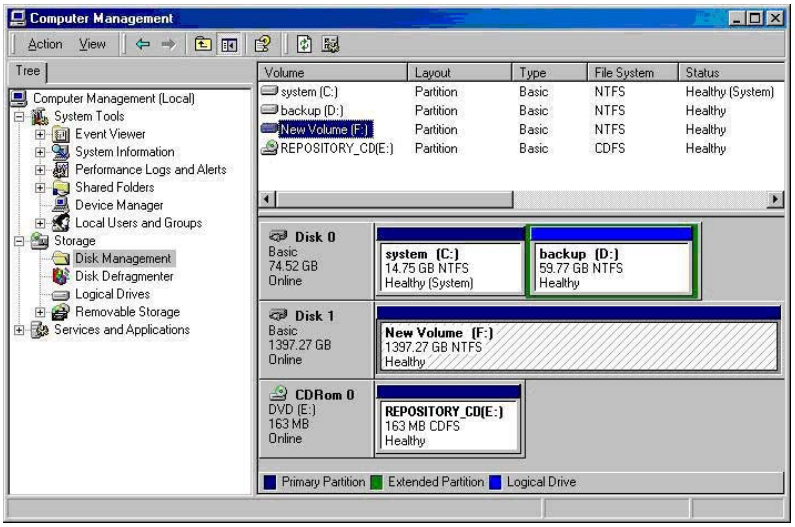
⌘ Click **Format this partition with the following settings** and **Perform a Quick Format**, setup the **File system to use**, **Allocation unit size**, **Volume label**, than click **Next**.



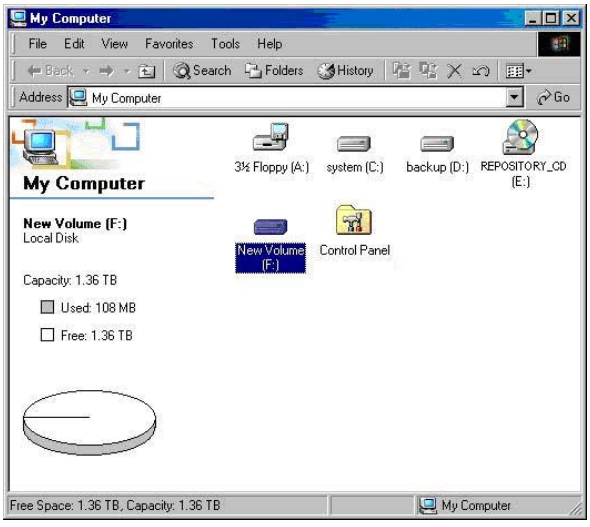
⌘ When the **Create Partition Wizard** has completed, click **Finish**.



The status of the newly created partition in the Disk Management window should change to Formatting and the percentage complete will be displayed. Depending upon the size of the partition, the format process may take several minutes. When complete, the status will change to "Healthy" and the name and drive letter will be updated. Once the disk reports Healthy, it appears in the listing in System Listing section with all of its pertinent information as well.



Repeat the above procedure as needed for any other partitions. Close the Data Management window by clicking on the small boxed "X" in the top right corner of the window. Click on the "My Computer" icon on the Desktop. The new drives will be visible and properly named. The new disks are available for use.



3.4 INSTALLING ON WINDOWS XP

3.4.1 INSTALLING SATA RAID HOST BUS ADAPTER

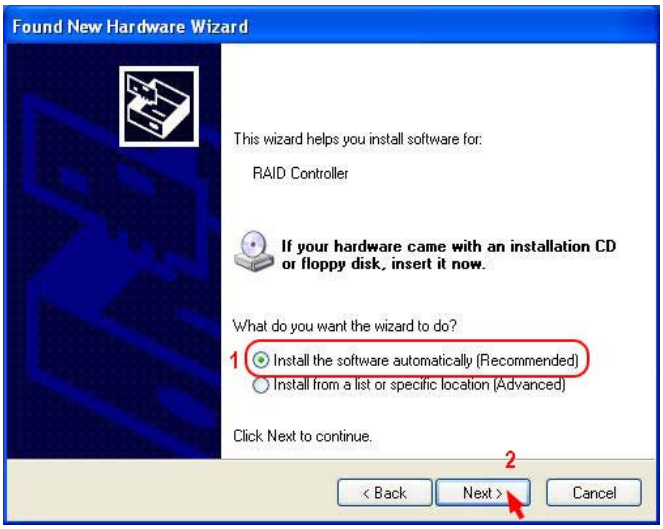
Follow the descriptions below, and step by step to complete the setup.

⌘ Insert the Setup and Installation Driver Repository CD in the CD-ROM drive.

⌘ When start the Windows O/S, new hardware will be found; select **No, not this time**, than click **Next**.

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).
Read our privacy policy
Can Windows connect to Windows Update to search for software?
Yes, this time only
Yes, now and every time I connect a device
No, not this time
1
Click Next to continue.
2
< Back
Next >
Cancel

⌘ Select **Install the software automatically (Recommended)**, than click **Next**.


Found New Hardware Wizard
This wizard helps you install software for:
RAID Controller
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
1
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
2
< Back
Next >
Cancel

⌘ When the installation has completed, click **Finish**.

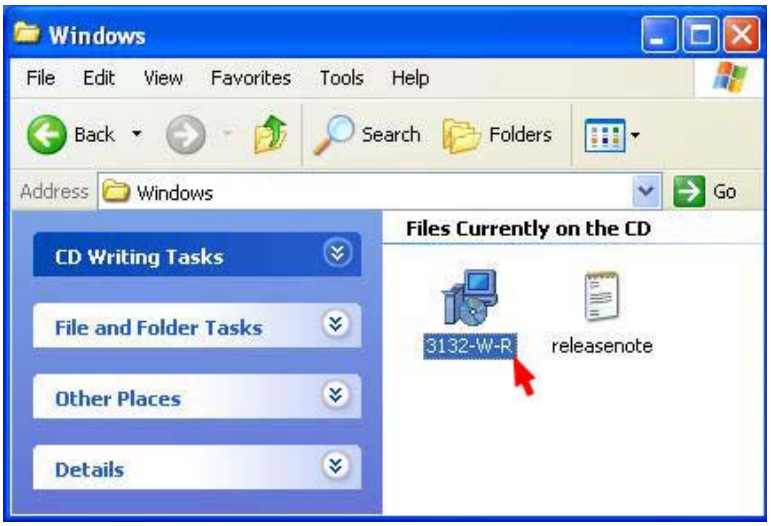
Found New Hardware Wizard
Completing the Found New Hardware Wizard
The wizard has finished installing the software for:
Silicon Image Sil 3132 SoftRaid 5 Controller
Click Finish to close the wizard.
< Back
Finish
Cancel

3.4.2 INSTALLING SATARAID5 UTILITY

Follow the descriptions below, and step by step to complete the installation.

⌘ Open the Setup and Installation Driver Repository CD and select the SATARAID5 Array Manager software from the Utility folder.

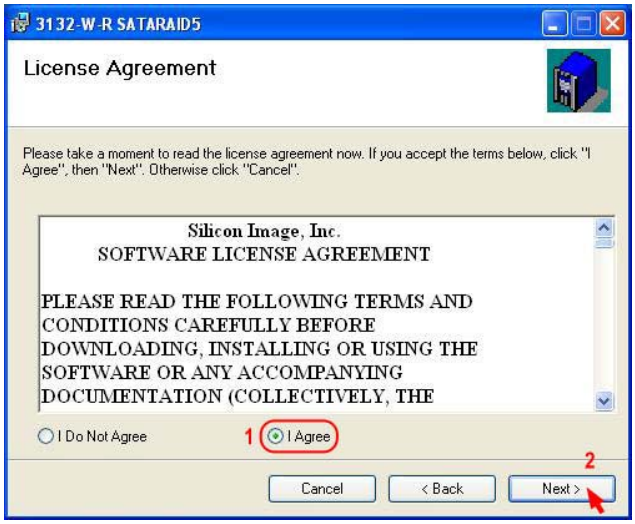
⌘ Double-click the **3132-W-R.msi** file (Located at: E:\Utility\SiI3132R5\Windows\3132-W-R.msi; PS: "E:" = CD-ROM drive letter).



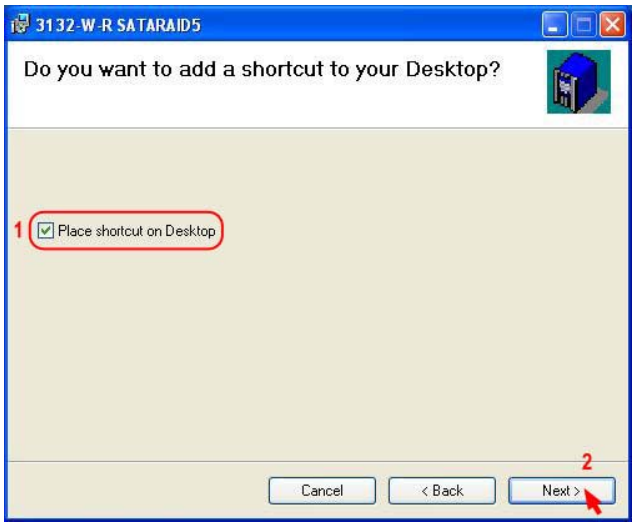
⌘ Click **Next** to begin setup.

3132-W-R SATARAID5
Welcome to the 3132-W-R SATARAID5 Setup Wizard
The installer will guide you through the steps required to install 3132-W-R SATARAID5 on your computer. To continue, click Next.
Cancel
< Back
Next >

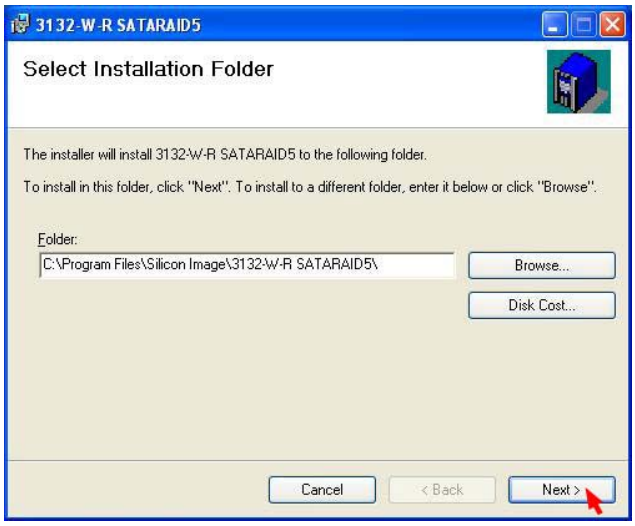
⌘ Select **I Agree**, than click **Next**.


3132-W-R SATARAID5
License Agreement
Please take a moment to read the license agreement now. If you accept the terms below, click "I Agree", then "Next". Otherwise click "Cancel".
Silicon Image, Inc.
SOFTWARE LICENSE AGREEMENT
PLEASE READ THE FOLLOWING TERMS AND CONDITIONS CAREFULLY BEFORE DOWNLOADING, INSTALLING OR USING THE SOFTWARE OR ANY ACCOMPANYING DOCUMENTATION (COLLECTIVELY, THE
I Do Not Agree
1
I Agree
2
Cancel
< Back
Next >

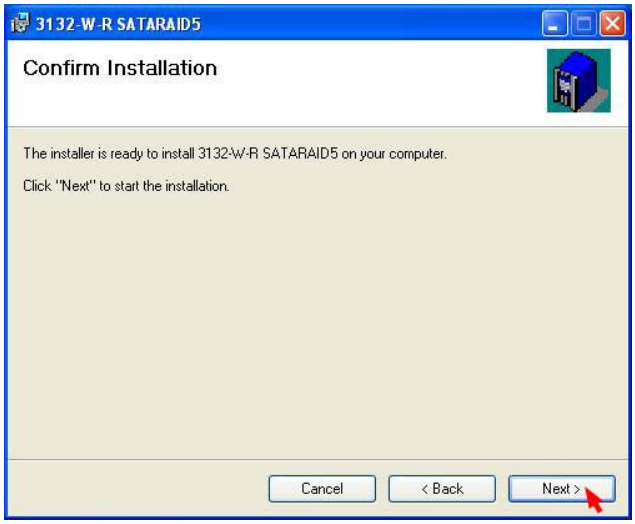
⌘ Select **Place shortcut on Desktop**, than click **Next** to create a shortcut on the desktop.



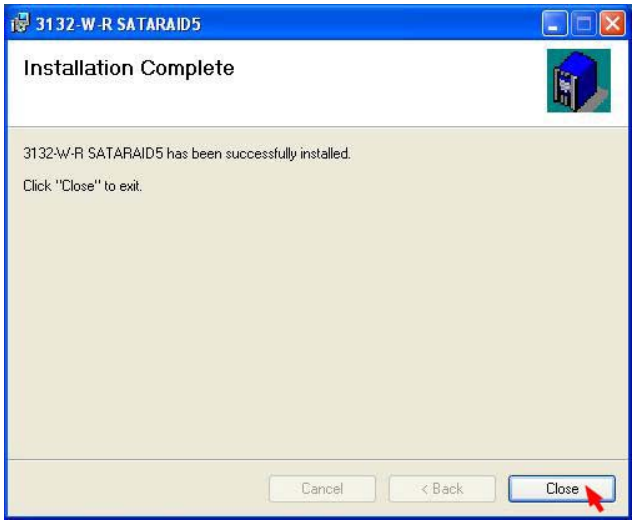
⌘ Click **Next** to use the default installation folder.


3132-W-R SATARAID5
Select Installation Folder
The installer will install 3132-W-R SATARAID5 to the following folder.
To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".
Folder:
C:\Program Files\Silicon Image\3132-W-R SATARAID5\
Browse...
Disk Cost...
Cancel
< Back
Next >

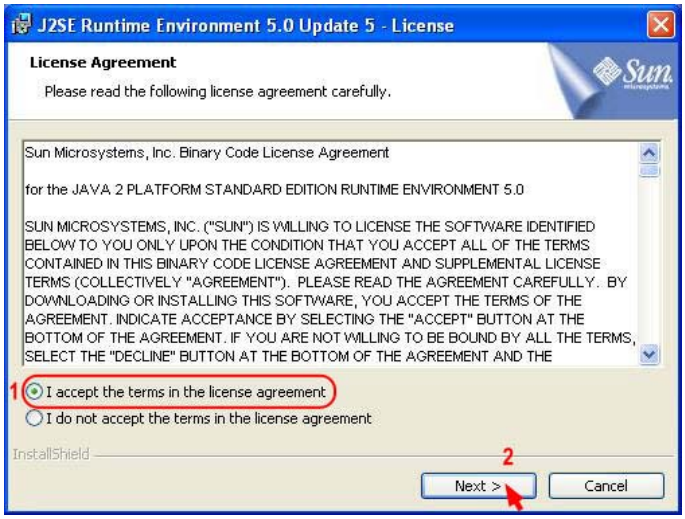
⌘ Click **Next** to begin the installation.


3132-W-R SATARAID5
Confirm Installation
The installer is ready to install 3132-W-R SATARAID5 on your computer.
Click "Next" to start the installation.
Cancel
< Back
Next >

⌘ When the SATARAID5 Utility installation has completed, click **Close**, and begin to the **Java platform** installation.



⌘ Select **I accept the terms in the license agreement**, than click **Next**.


J2SE Runtime Environment 5.0 Update 5 - License
License Agreement
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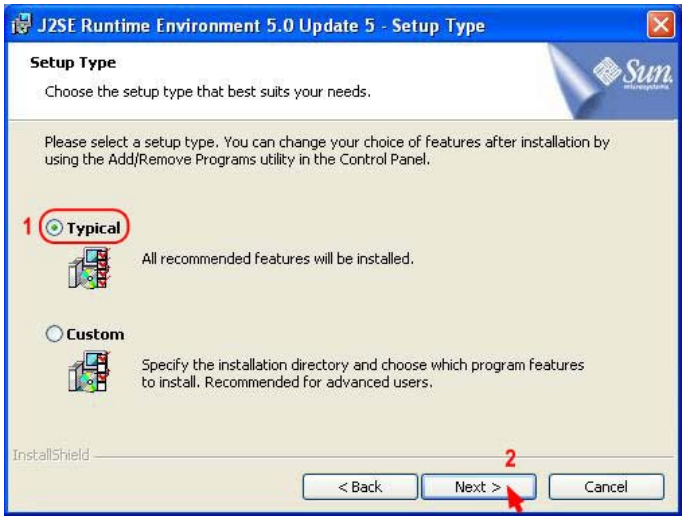
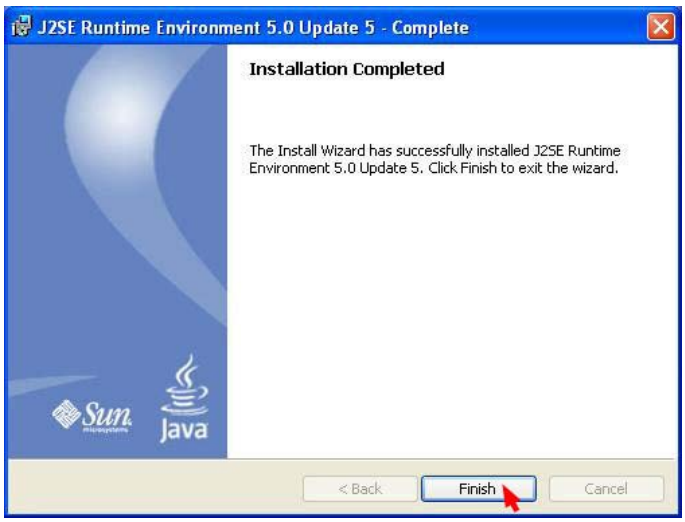
Sun Microsystems, Inc. Binary Code License Agreement
for the JAVA 2 PLATFORM STANDARD EDITION RUNTIME ENVIRONMENT 5.0
SUN MICROSYSTEMS, INC. ("SUN") IS WILLING TO LICENSE THE SOFTWARE IDENTIFIED BELOW TO YOU ONLY UPON THE CONDITION THAT YOU ACCEPT ALL OF THE TERMS CONTAINED IN THIS BINARY CODE LICENSE AGREEMENT AND SUPPLEMENTAL LICENSE TERMS (COLLECTIVELY "AGREEMENT"). PLEASE READ THE AGREEMENT CAREFULLY. BY DOWNLOADING OR INSTALLING THIS SOFTWARE, YOU ACCEPT THE TERMS OF THE AGREEMENT. INDICATE ACCEPTANCE BY SELECTING THE "ACCEPT" BUTTON AT THE BOTTOM OF THE AGREEMENT. IF YOU ARE NOT WILLING TO BE BOUND BY ALL THE TERMS, SELECT THE "DECLINE" BUTTON AT THE BOTTOM OF THE AGREEMENT AND THE
1
I accept the terms in the license agreement
I do not accept the terms in the license agreement
InstallShield
2
Next >
Cancel

⌘ Select **Typical**, than click **Next**.


J2SE Runtime Environment 5.0 Update 5 - Setup Type
Setup Type
Choose the setup type that best suits your needs.
Please select a setup type. You can change your choice of features after installation by using the Add/Remove Programs utility in the Control Panel.
1
Typical
All recommended features will be installed.
Custom
Specify the installation directory and choose which program features to install. Recommended for advanced users.
InstallShield
2
< Back
Next >
Cancel

⌘ When Java platform installation has completed, click **Finish** to exit.


J2SE Runtime Environment 5.0 Update 5 - Complete
Installation Completed
The Install Wizard has successfully installed J2SE Runtime Environment 5.0 Update 5. Click Finish to exit the wizard.
Sun
Java
< Back
Finish
Cancel

⌘ Select **Start** > **All Programs** > **Silicon Image** > **SATARaid5Manager** to start the Array Manager software.

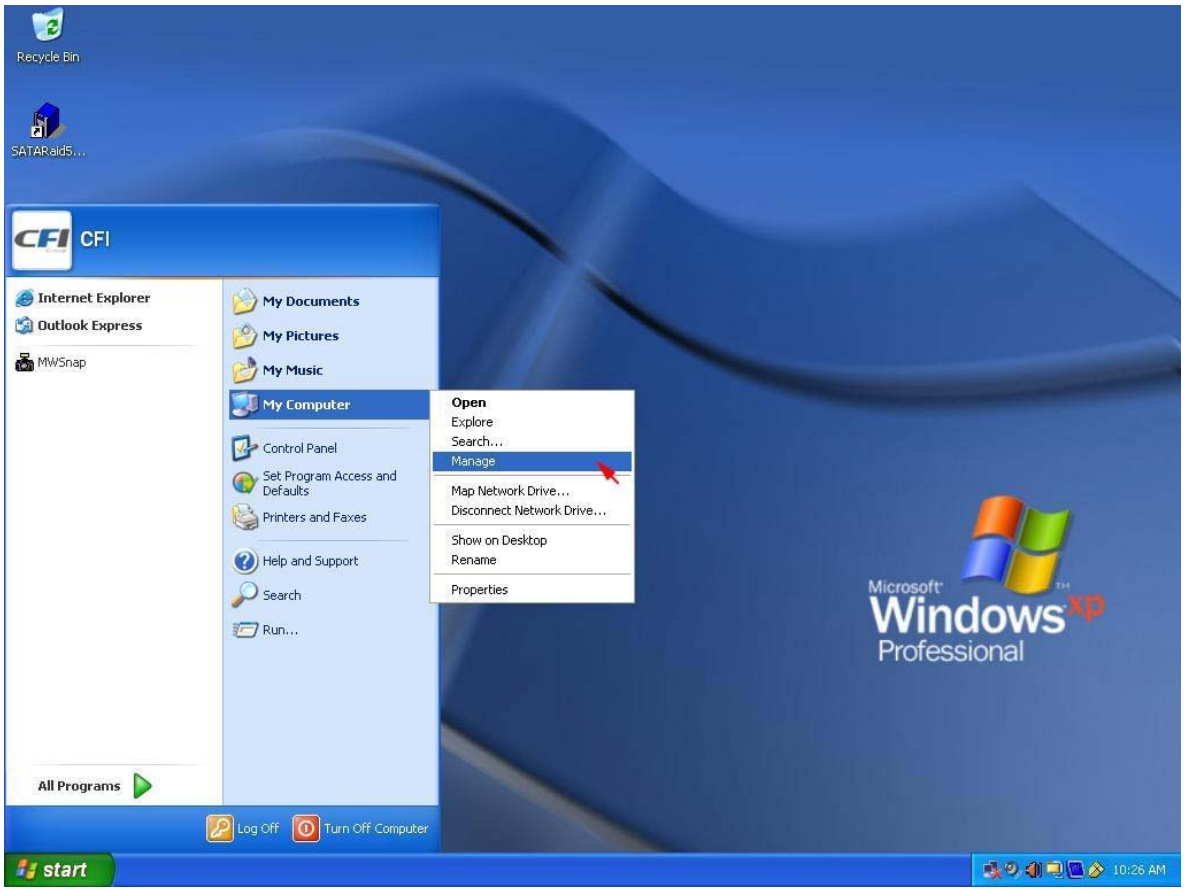
3.4.3 DISK DRIVE MODE SETUP

Please refer to the chapter 4.

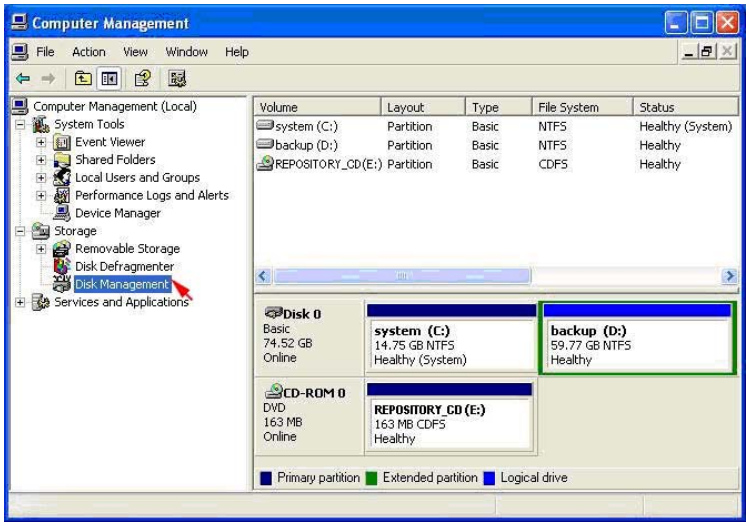
3.4.4 ALLOCATING PARTITIONS ON WINDOWS XP 32-BIT

Before creating any partitions, RAID groups must first be created using the SATARaid5Manager utility. Once the sets have been created, allow the system to load Windows.

⌘ Right-click on **My Computer** icon and select **Manage** from the pop-up menu.



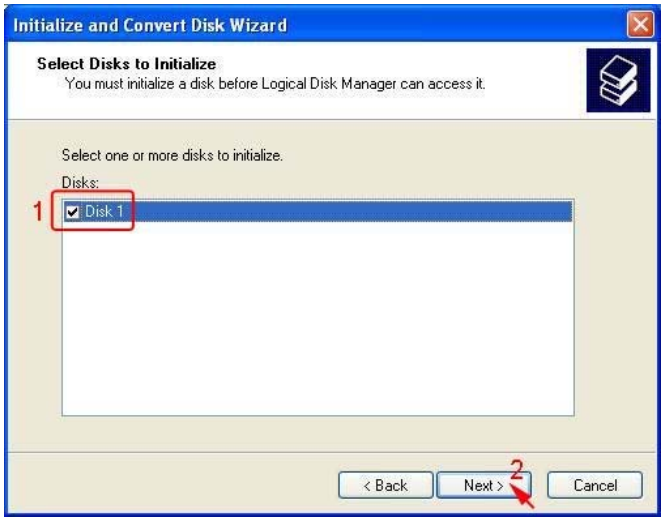
⌘ Select **Disk Management** under **Storage** to view the disk drives.



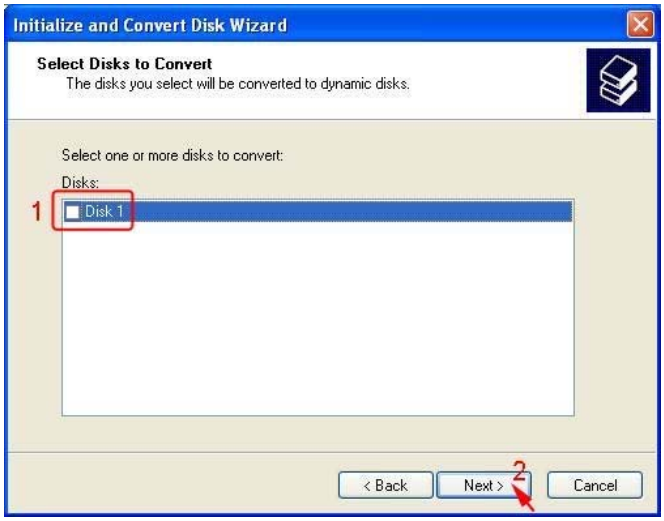
⌘ When **Initialize and Convert Disk Wizard** appears, click **Next**.

Initialize and Convert Disk Wizard
Welcome to the Initialize and Convert Disk Wizard
This wizard helps you to initialize new disks and to convert empty basic disks to dynamic disks.
You can use dynamic disks to create software-based RAID volumes that can be mirrored, or they can be striped or spanned across multiple disks. You can also expand single-disk and spanned volumes without having to restart the computer.
After you convert a disk to dynamic, you can only use Windows 2000 and later versions of Windows on any volume of that disk.
To continue, click Next.
< Back
Next >
Cancel

⌘ Select the new disk to initialize, than click **Next**.



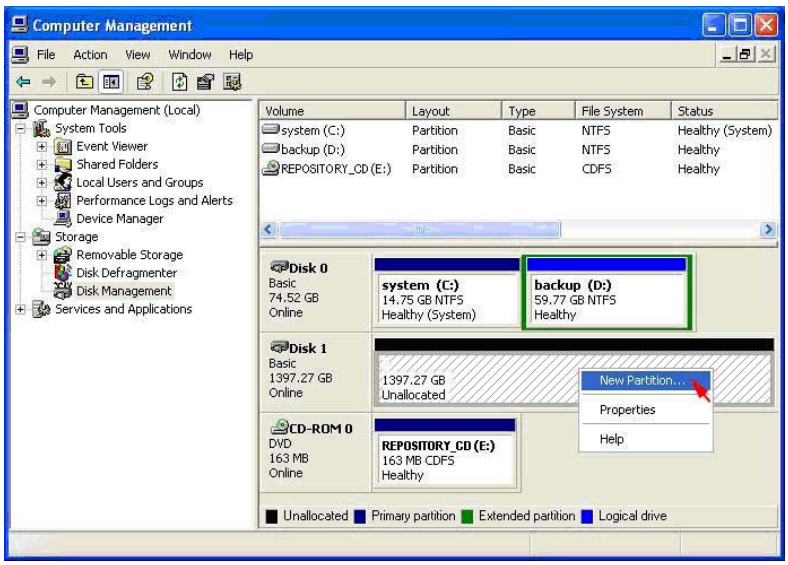
⌘ Do not click any disk to convert, than click **Next**.



⌘ When the **Initialize and Convert Disk Wizard** has completed, click **Finish**.

Initialize and Convert Disk Wizard
Completing the Initialize and Convert Disk Wizard
You have successfully completed the Initialize and Convert Disk Wizard.
You selected the following settings:
Initialize: Disk 1
Convert: None
To close this wizard, click Finish.
< Back
Finish
Cancel

⌘ Right-click on the **Unallocated** partition and select **New Partition…** from the pop-up menu.



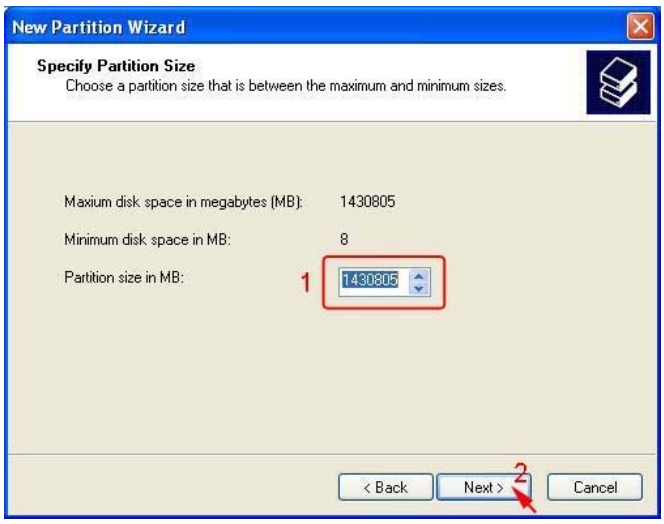
⌘ Click **Next** to create a partition on a basic disk.

New Partition Wizard
Welcome to the New Partition Wizard
This wizard helps you create a partition on a basic disk.
A basic disk is a physical disk that contains primary partitions, extended partitions, and logical drives. You can use any version of Windows or MS-DOS to gain access to partitions on basic disks.
To continue, click Next.
< Back
Next >
Cancel

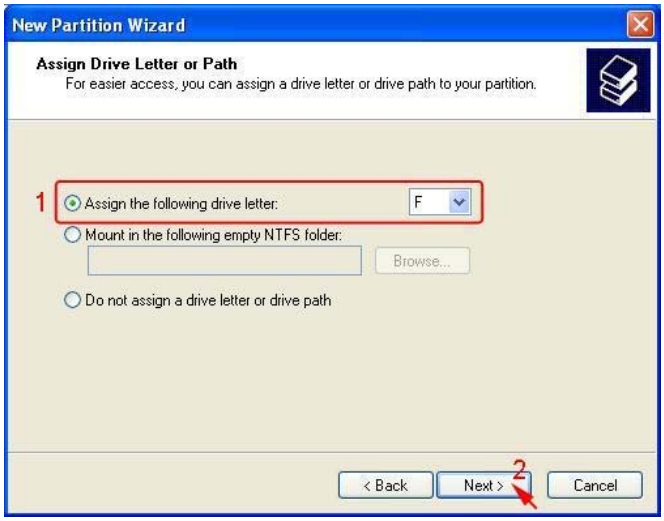
⌘ Select the partition type you want to create, than click **Next**.

New Partition Wizard
Select Partition Type
There are three types of partitions: primary, extended, and logical.
Select the partition you want to create:
1
Primary partition
Extended partition
Logical drive
Description
A primary partition is a volume you create using free space on a basic disk. Windows and other operating systems can start from a primary partition. You can create up to four primary partitions or three primary partitions and an extended partition.
< Back
Next >
2
Cancel

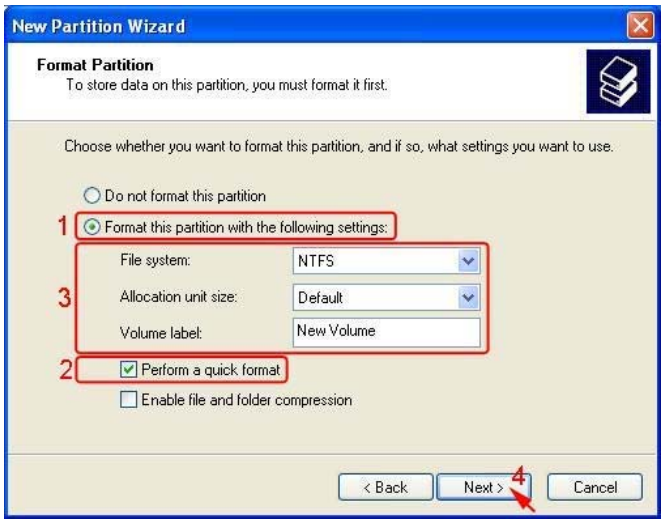
⌘ Specify the partition size you want to create, than click **Next**.



⌘ Assign the drive letter or path you want to create, than click **Next**.

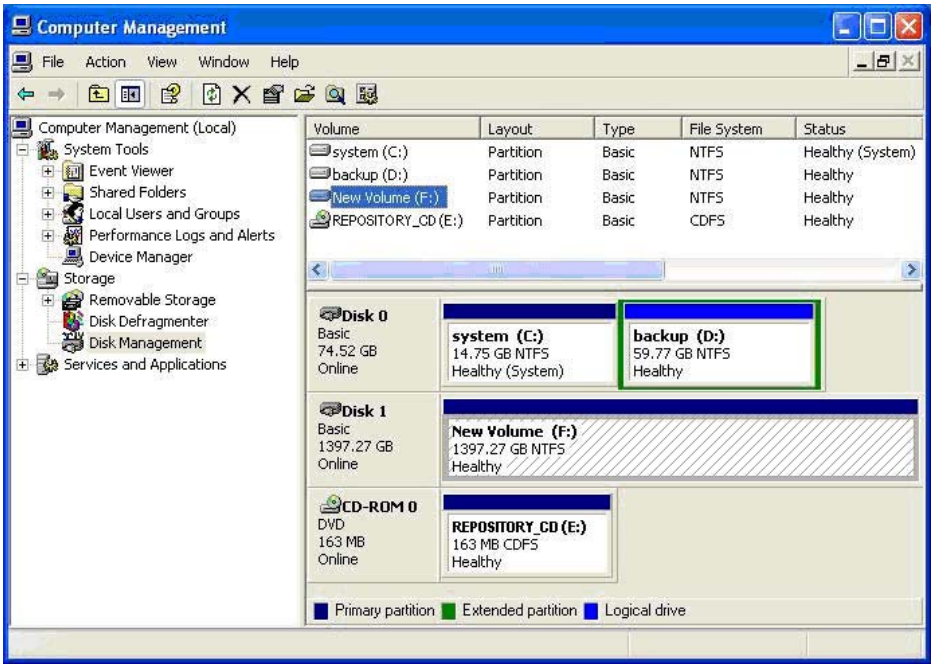

New Partition Wizard
Assign Drive Letter or Path
For easier access, you can assign a drive letter or drive path to your partition.
1
Assign the following drive letter:
F
Mount in the following empty NTFS folder:
Browse...
Do not assign a drive letter or drive path
< Back
Next >
2
Cancel

⌘ Click **Format this partition with the following settings** and **Perform a quick format**, setup the **File system**, **Allocation unit size**, **Volume label**, than click **Next**.

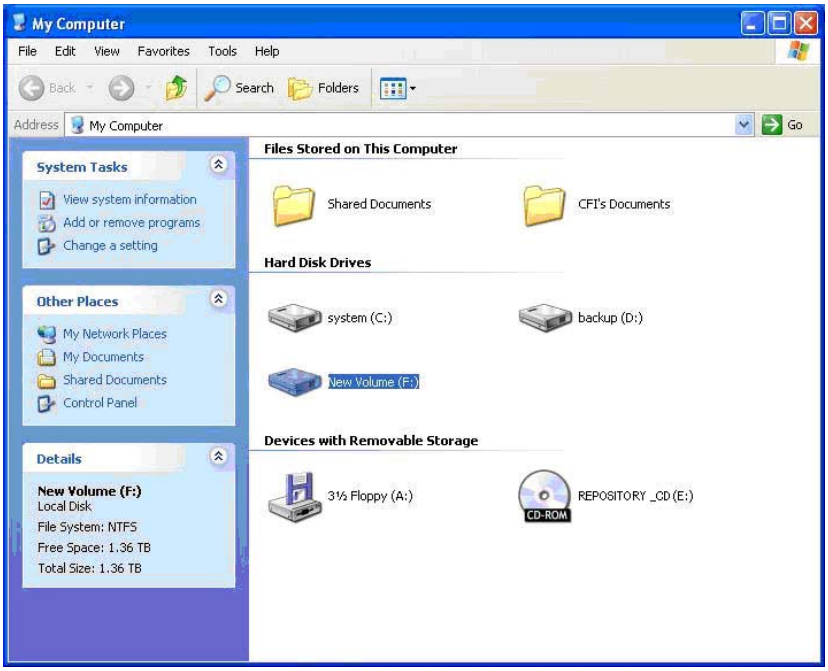


⌘ When the **New Partition Wizard** has completed, click **Finish**.

The status of the newly created partition in the Disk Management window should change to Formatting and the percentage complete will be displayed. Depending upon the size of the partition, the format process may take several minutes. When complete, the status will change to “Healthy” and the name and drive letter will be updated. Once the disk reports Healthy, it appears in the listing in System Listing section with all of its pertinent information as well.



Repeat the above procedure as needed for any other partitions. Close the Data Management window by clicking on the small boxed “X” in the top right corner of the window. Click on the “My Computer” icon on the Desktop. The new drives will be visible and properly named. The new disks are available for use.

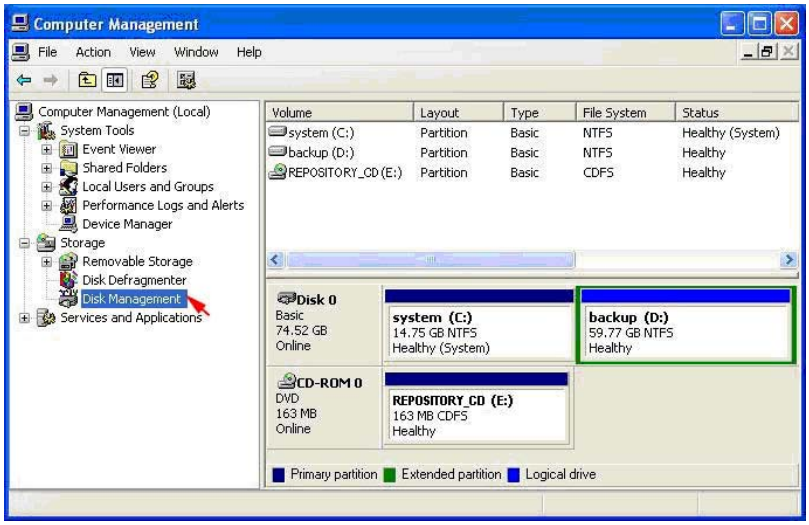


3.4.5 ALLOCATING PARTITIONS ON WINDOWS XP 64-BIT

Before creating any partitions, RAID groups must first be created using the SATARaid5Manager utility. Once the sets have been created, allow the system to load Windows.

⌘ Right-click on **My Computer** icon and select **Manage** from the pop-up menu.

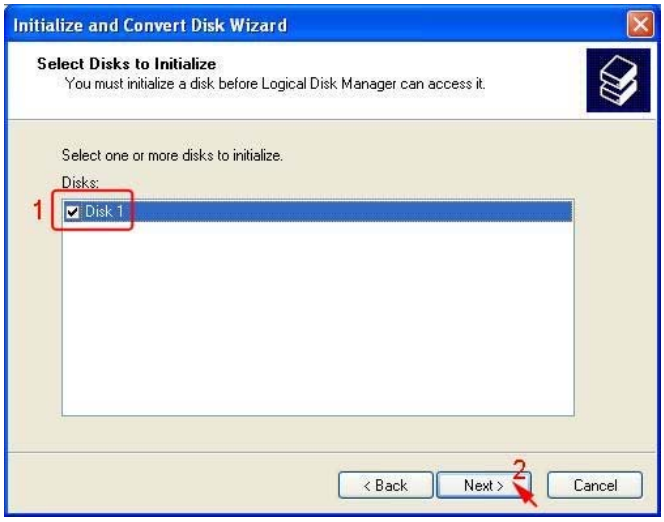
⌘ Select **Disk Management** under **Storage** to view the disk drives.



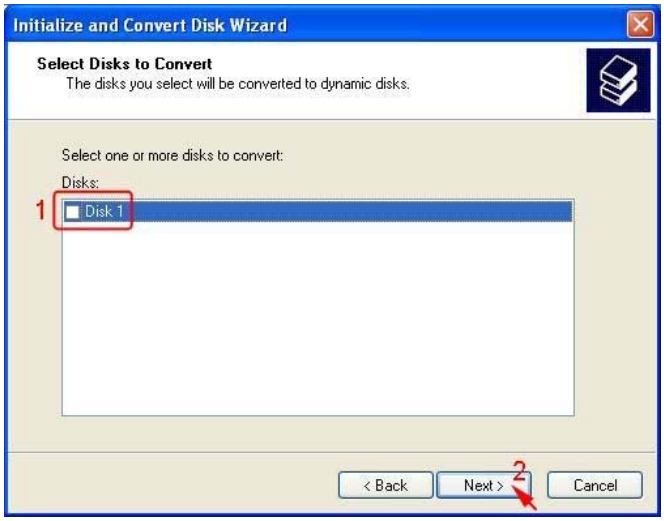
⌘ When **Initialize and Convert Disk Wizard** appears, click **Next**.

Initialize and Convert Disk Wizard
Welcome to the Initialize and Convert Disk Wizard
This wizard helps you to initialize new disks and to convert empty basic disks to dynamic disks.
You can use dynamic disks to create software-based RAID volumes that can be mirrored, or they can be striped or spanned across multiple disks. You can also expand single-disk and spanned volumes without having to restart the computer.
After you convert a disk to dynamic, you can only use Windows 2000 and later versions of Windows on any volume of that disk.
To continue, click Next.
< Back
Next >
Cancel

⌘ Select the new disk to initialize, than click **Next**.



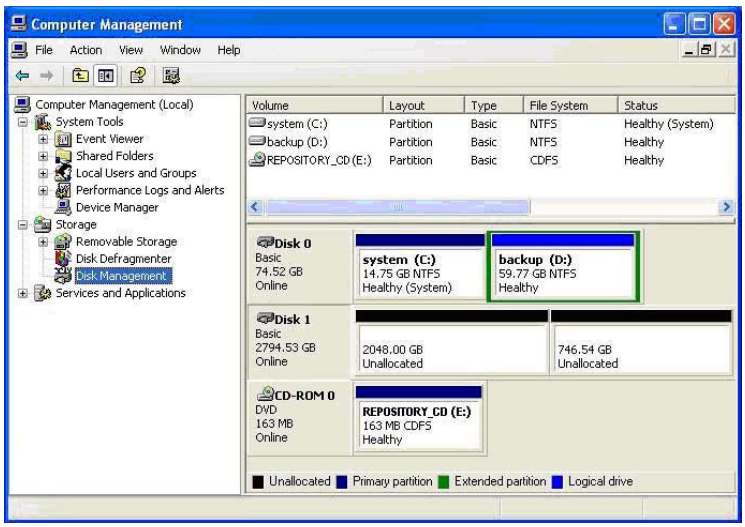
⌘ Do not click any disk to convert, than click **Next**.



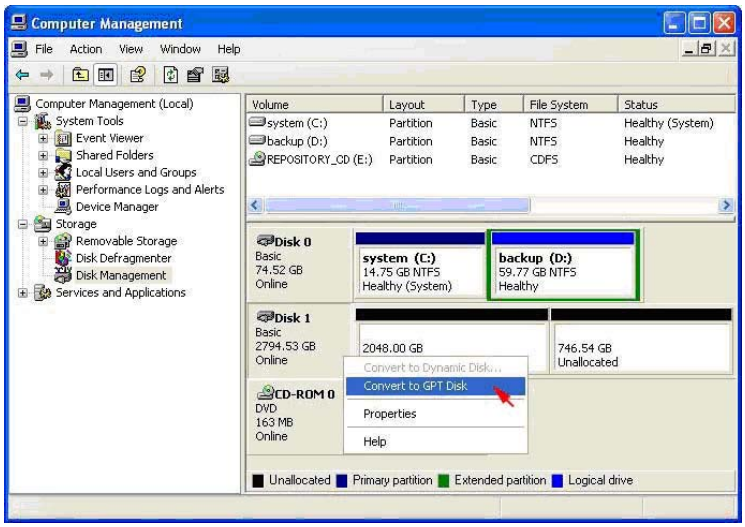
⌘ When the **Initialize and Convert Disk Wizard** has completed, click **Finish**.

Initialize and Convert Disk Wizard
Completing the Initialize and Convert Disk Wizard
You have successfully completed the Initialize and Convert Disk Wizard.
You selected the following settings:
Initialize to MBR: Disk 1
Convert: None
To close this wizard, click Finish.
< Back
Finish
Cancel

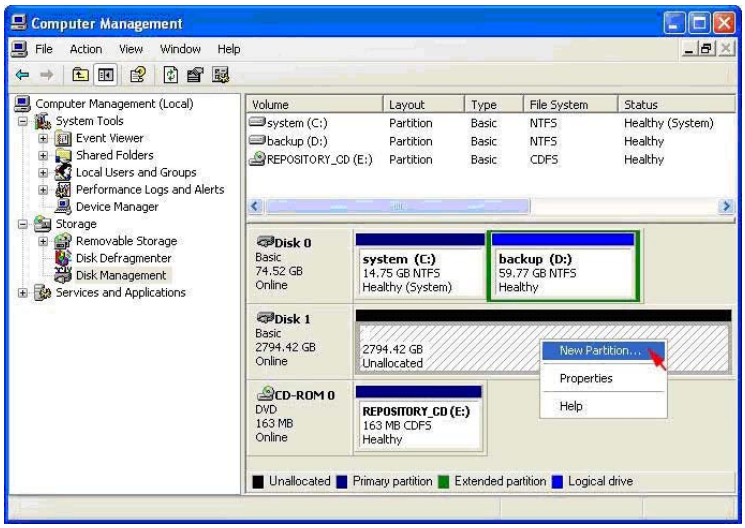
⌘ Windows 64-bit system supports **GPT disk** which supports disk volume greater than 2TB.


Computer Management
File Action View Window Help
Computer Management (Local)
System Tools
Event Viewer
Shared Folders
Local Users and Groups
Performance Logs and Alerts
Device Manager
Storage
Removable Storage
Disk Defragmenter
Disk Management
Services and Applications
Volume Layout Type File System Status
system (C:) Partition Basic NTFS Healthy (System)
backup (D:) Partition Basic NTFS Healthy
REPOSITORY_CD (E:) Partition Basic CDFS Healthy
Disk 0 Basic 74.52 GB Online
system (C:) 14.75 GB NTFS Healthy (System)
backup (D:) 59.77 GB NTFS Healthy
Disk 1 Basic 2794.53 GB Online
2048.00 GB Unallocated
746.54 GB Unallocated
CD-ROM 0 DVD 163 MB Online
REPOSITORY_CD (E:) 163 MB CDFS Healthy
Unallocated Primary partition Extended partition Logical drive

⌘ Right-click on the **Basic disk** and select **Convert to GPT disk** from the pop-up menu.



⌘ Right-click on the **Unallocated** partition and select **New Partition…** from the pop-up menu.



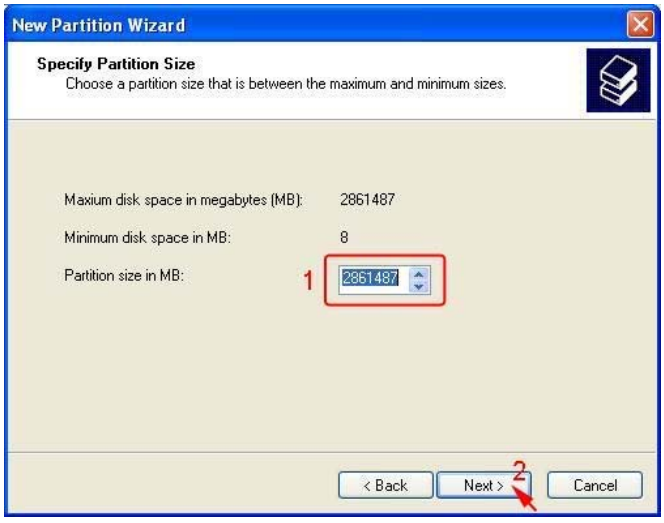
⌘ Click **Next** to create a partition on a basic disk.

New Partition Wizard
Welcome to the New Partition Wizard
This wizard helps you create a partition on a basic disk.
A basic disk is a physical disk that contains primary partitions, extended partitions, and logical drives.
Partitions created on Master Boot Record (MBR) disks can be accessed from any version of Windows or MS-DOS.
Partitions created on GUID Partition Table (GPT) disks can only be accessed from Windows Server 2003 Service Pack 1 or later, or from any 64-bit version of Windows.
To continue, click Next.
< Back
Next >
Cancel

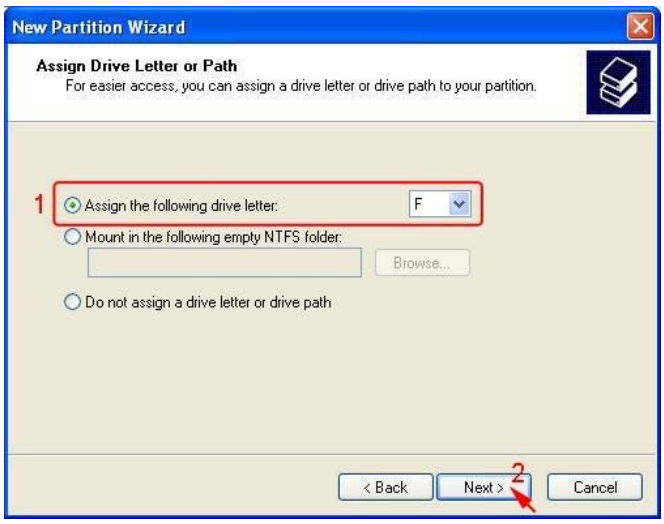
⌘ Select the partition to create, than click **Next**.

New Partition Wizard
Select Partition Type
There are three types of partitions: primary, extended, and logical.
Select the partition you want to create:
1
Primary partition
Extended partition
Logical drive
Description
A primary partition is a volume you create using free space on a basic disk. Windows and other operating systems can start from a primary partition. You can create up to 128 primary partitions on a GPT basic disk. On a Master Boot Record (MBR) basic disk, you can create up to four primary partitions or three primary partitions and an extended partition.
< Back
Next >
2
Cancel

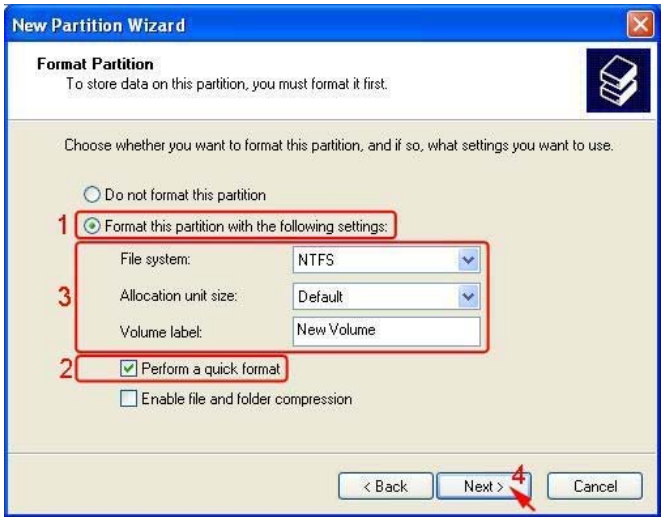
⌘ Specify the partition size you want to create, than click **Next**.


New Partition Wizard
Specify Partition Size
Choose a partition size that is between the maximum and minimum sizes.
Maxium disk space in megabytes (MB): 2861487
Minimum disk space in MB: 8
Partition size in MB: 2861487
1
< Back
Next >
2
Cancel

⌘ Assign the drive letter or path you want to create, than click **Next**.

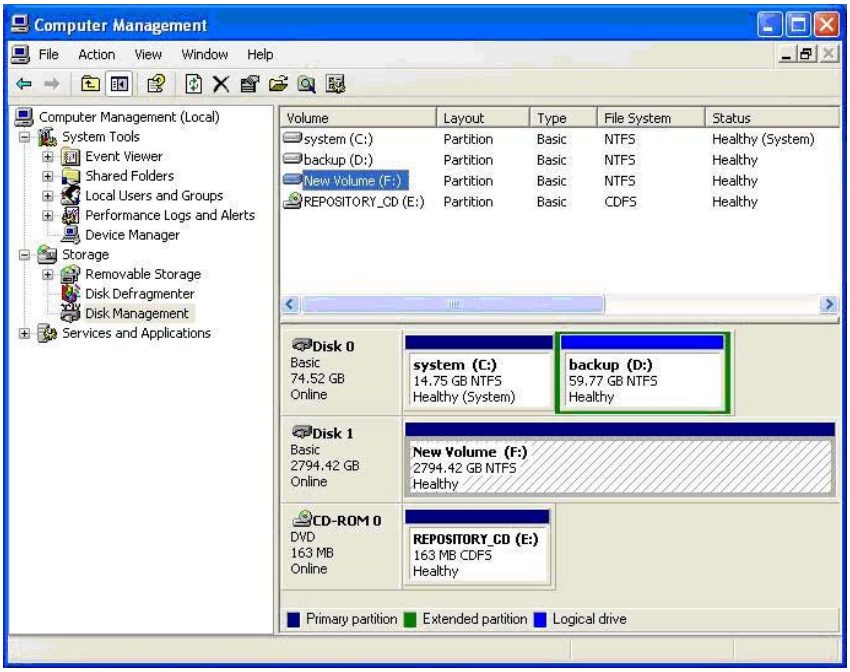

New Partition Wizard
Assign Drive Letter or Path
For easier access, you can assign a drive letter or drive path to your partition.
1
Assign the following drive letter: F
Mount in the following empty NTFS folder:
Browse...
Do not assign a drive letter or drive path
< Back
Next >
2
Cancel

⌘ Click **Format this partition with the following settings** and **Perform a quick format**, setup the **File system**, **Allocation unit size**, **Volume label**, than click **Next**.

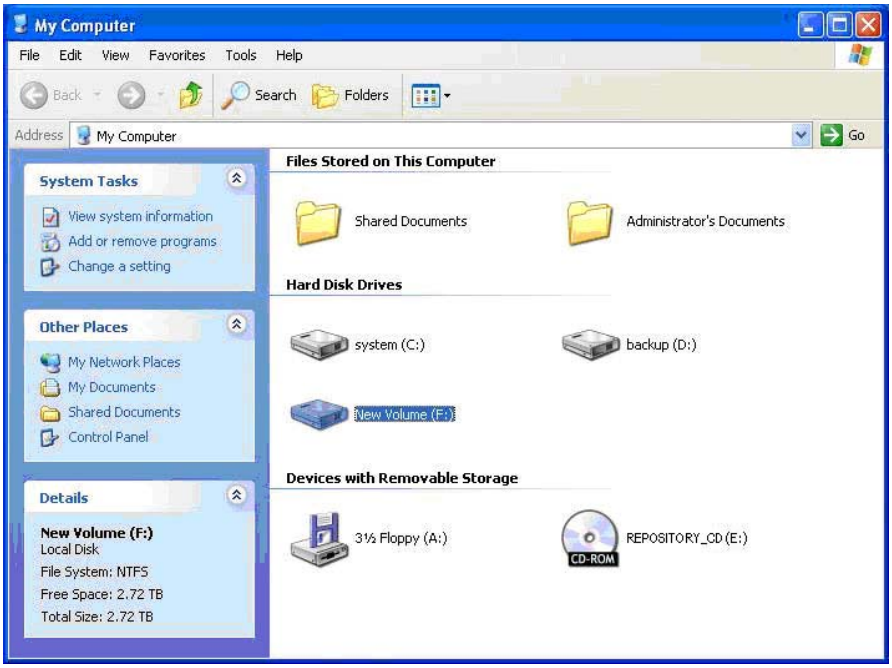

New Partition Wizard
Format Partition
To store data on this partition, you must format it first.
Choose whether you want to format this partition, and if so, what settings you want to use.
Do not format this partition
1
Format this partition with the following settings:
File system: NTFS
3
Allocation unit size: Default
Volume label: New Volume
2
Perform a quick format
Enable file and folder compression
< Back
Next >
4
Cancel

⌘ When the **New Partition Wizard** has completed, click **Finish**.

The status of the newly created partition in the Disk Management window should change to Formatting and the percentage complete will be displayed. Depending upon the size of the partition, the format process may take several minutes. When complete, the status will change to "Healthy" and the name and drive letter will be updated. Once the disk reports Healthy, it appears in the listing in System Listing section with all of its pertinent information as well.



Repeat the above procedure as needed for any other partitions. Close the Data Management window by clicking on the small boxed “X” in the top right corner of the window. Click on the “My Computer” icon on the Desktop. The new drives will be visible and properly named. The new disks are available for use.



3.5 INSTALLING ON WINDOWS SERVER 2003

3.5.1 INSTALLING SATA RAID HOST BUS ADAPTER

Follow the descriptions below, and step by step to complete the setup.

⌘ Insert the Setup and Installation Driver Repository CD in the CD-ROM drive.

⌘ When start the Windows O/S, new hardware will be found; Select **No, not this time**, than click **Next**.

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).
Online privacy information
Can Windows connect to Windows Update to search for software?
Yes, this time only
Yes, now and every time I connect a device
1
No, not this time
Click Next to continue.
2
< Back
Next >
Cancel

⌘ Select **Install the software automatically (Recommended)**, than click **Next**.

Found New Hardware Wizard
This wizard helps you install software for:
RAID Controller
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
1
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
2
< Back
Next >
Cancel

⌘ When the installation has completed, click **Finish**.

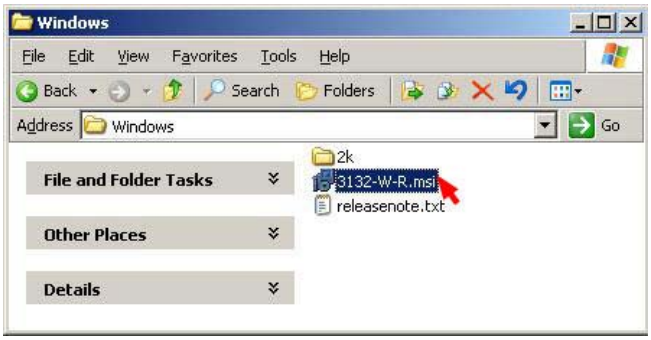
Found New Hardware Wizard
Completing the Found New Hardware Wizard
The wizard has finished installing the software for:
Silicon Image Sil 3132 SoftRaid 5 Controller
Click Finish to close the wizard.
< Back
Finish
Cancel

3.5.2 INSTALLING SATARAID5 UTILITY

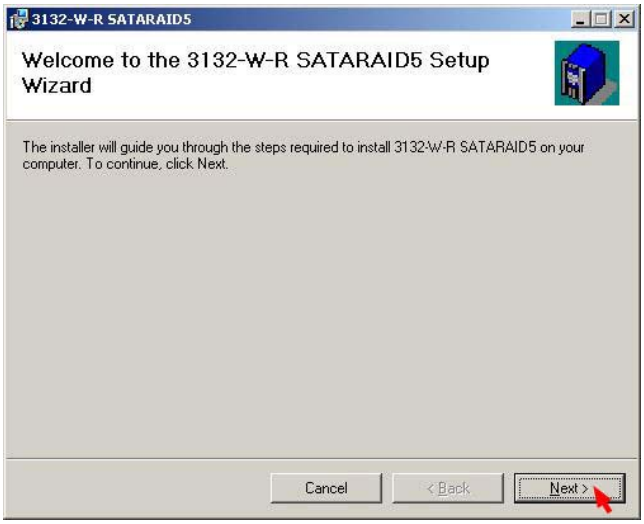
Follow the descriptions below, and step by step to complete the installation.

⌘ Open the Setup and Installation Driver Repository CD and select the SATARAID5 Array Manager software from the Utility folder.

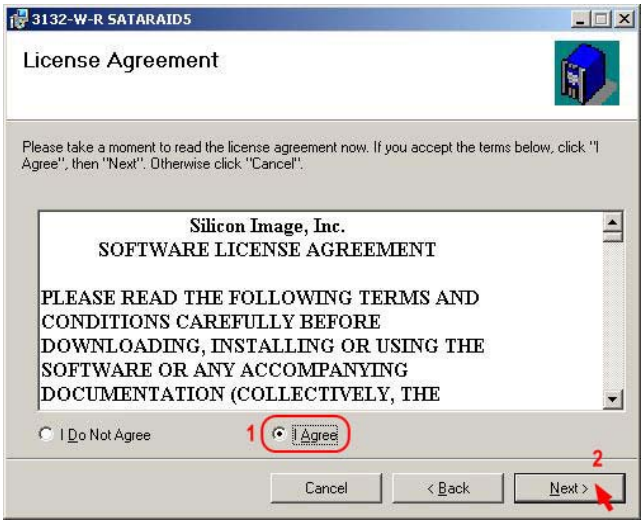
⌘ Double-click the **3132-W-R.msi** file (Located at: E:\Utility\SiI3132R5\Windows\3132-W-R.msi; PS: "E:" = CD-ROM drive letter).



⌘ Click **Next** to begin setup.

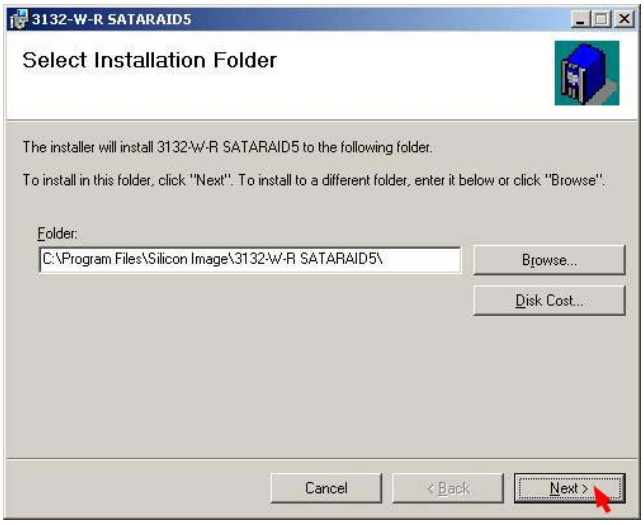

3132-W-R SATARAID5
Welcome to the 3132-W-R SATARAID5 Setup Wizard
The installer will guide you through the steps required to install 3132-W-R SATARAID5 on your computer. To continue, click Next.
Cancel
< Back
Next >

⌘ Select **I Agree**, than click **Next**.

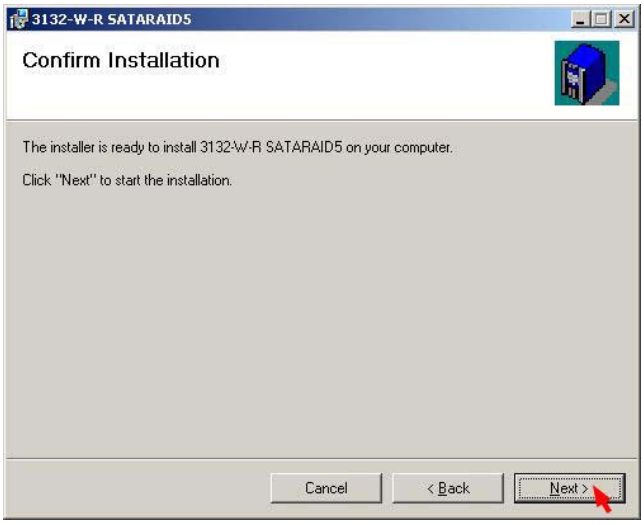

3132-W-R SATARAID5
License Agreement
Please take a moment to read the license agreement now. If you accept the terms below, click "I Agree", then "Next". Otherwise click "Cancel".
Silicon Image, Inc.
SOFTWARE LICENSE AGREEMENT
PLEASE READ THE FOLLOWING TERMS AND CONDITIONS CAREFULLY BEFORE DOWNLOADING, INSTALLING OR USING THE SOFTWARE OR ANY ACCOMPANYING DOCUMENTATION (COLLECTIVELY, THE
I Do Not Agree
1
I Agree
2
Cancel
< Back
Next >

⌘ Select **Place shortcut on Desktop**, than click **Next** to create a shortcut on the desktop.

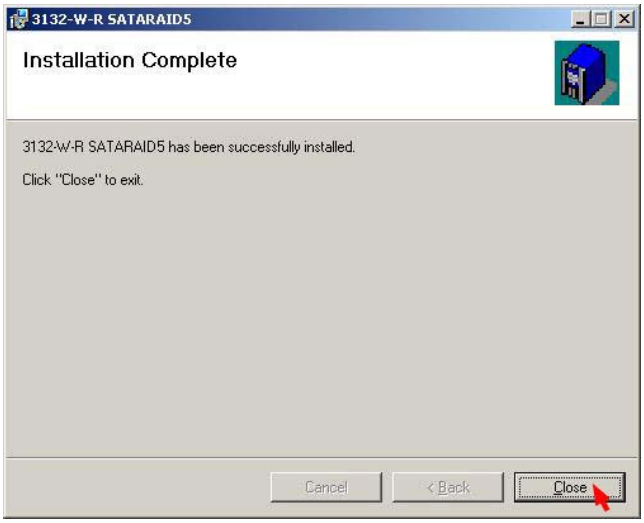
⌘ Click **Next** to use the default installation folder.


3132-W-R SATARAID5
Select Installation Folder
The installer will install 3132-W-R SATARAID5 to the following folder.
To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".
Folder:
C:\Program Files\Silicon Image\3132-W-R SATARAID5\
Browse...
Disk Cost...
Cancel
< Back
Next >

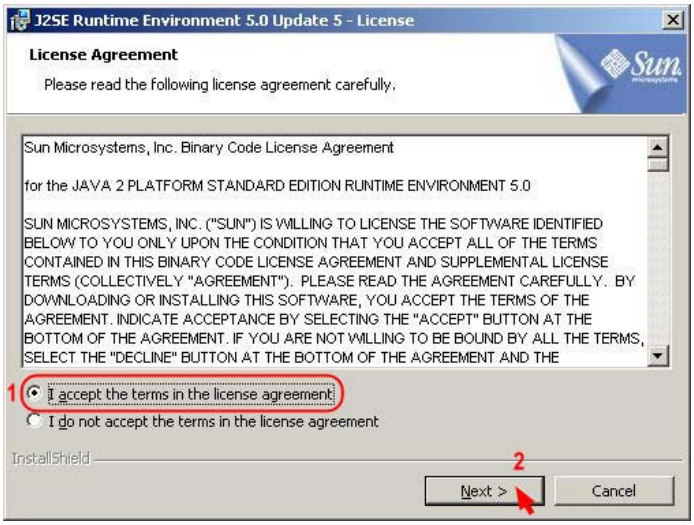
⌘ Click **Next** to begin the installation.


3132-W-R SATARAID5
Confirm Installation
The installer is ready to install 3132-W-R SATARAID5 on your computer.
Click "Next" to start the installation.
Cancel
< Back
Next >

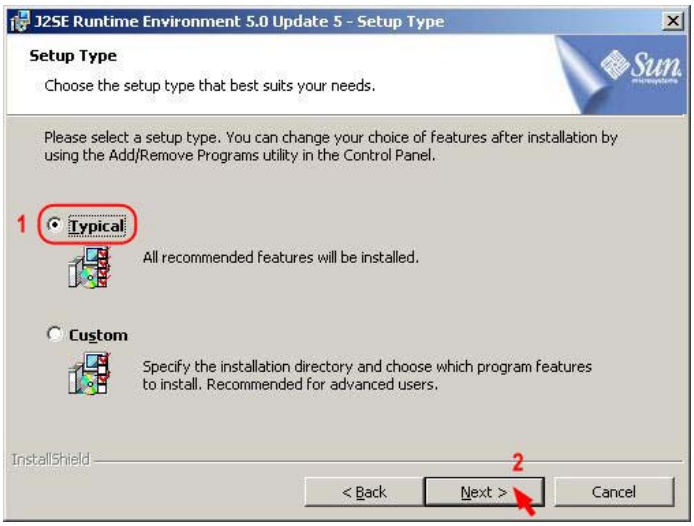
⌘ When the SATARAID5 Utility installation has completed, click **Close**, and begin to the Java installation.



⌘ Select **I accept the terms in the license agreement**, than click **Next**.


J2SE Runtime Environment 5.0 Update 5 - License
License Agreement
Please read the following license agreement carefully.
Sun Microsystems, Inc. Binary Code License Agreement
for the JAVA 2 PLATFORM STANDARD EDITION RUNTIME ENVIRONMENT 5.0
SUN MICROSYSTEMS, INC. ("SUN") IS WILLING TO LICENSE THE SOFTWARE IDENTIFIED BELOW TO YOU ONLY UPON THE CONDITION THAT YOU ACCEPT ALL OF THE TERMS CONTAINED IN THIS BINARY CODE LICENSE AGREEMENT AND SUPPLEMENTAL LICENSE TERMS (COLLECTIVELY "AGREEMENT"). PLEASE READ THE AGREEMENT CAREFULLY. BY DOWNLOADING OR INSTALLING THIS SOFTWARE, YOU ACCEPT THE TERMS OF THE AGREEMENT. INDICATE ACCEPTANCE BY SELECTING THE "ACCEPT" BUTTON AT THE BOTTOM OF THE AGREEMENT. IF YOU ARE NOT WILLING TO BE BOUND BY ALL THE TERMS, SELECT THE "DECLINE" BUTTON AT THE BOTTOM OF THE AGREEMENT AND THE
1
I accept the terms in the license agreement
I do not accept the terms in the license agreement
InstallShield
2
Next >
Cancel

⌘ Select **Typical**, than click **Next**.


J2SE Runtime Environment 5.0 Update 5 - Setup Type
Setup Type
Choose the setup type that best suits your needs.
Please select a setup type. You can change your choice of features after installation by using the Add/Remove Programs utility in the Control Panel.
1
Typical
All recommended features will be installed.
Custom
Specify the installation directory and choose which program features to install. Recommended for advanced users.
InstallShield
2
< Back
Next >
Cancel

⌘ When Java platform installation has completed, click **Finish** to exit.

J2SE Runtime Environment 5.0 Update 5 - Complete
Installation Completed
The Install Wizard has successfully installed J2SE Runtime Environment 5.0 Update 5. Click Finish to exit the wizard.
Sun
Java
< Back
Finish
Cancel

⌘ Select **Start** > **All Programs** > **Silicon Image** > **SATARaid5Manager** to start the Array Manager software.

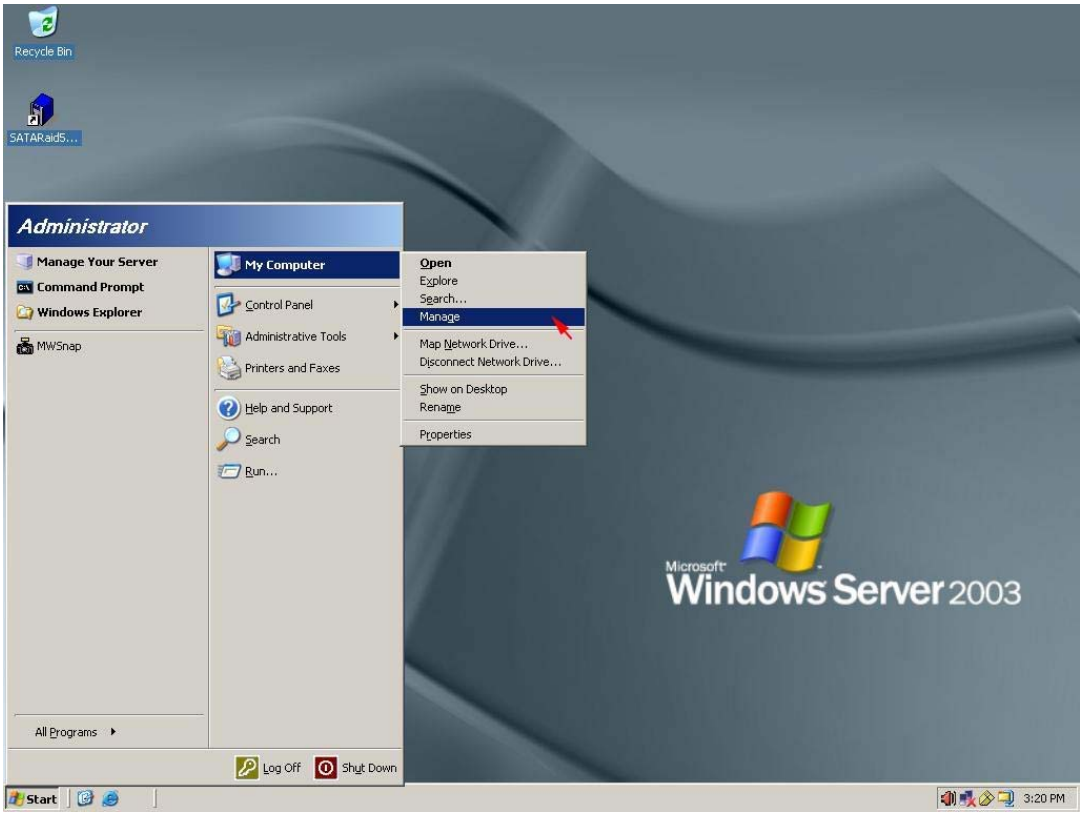
3.5.3 DISK DRIVE MODE SETUP

Please refer to the chapter 4.

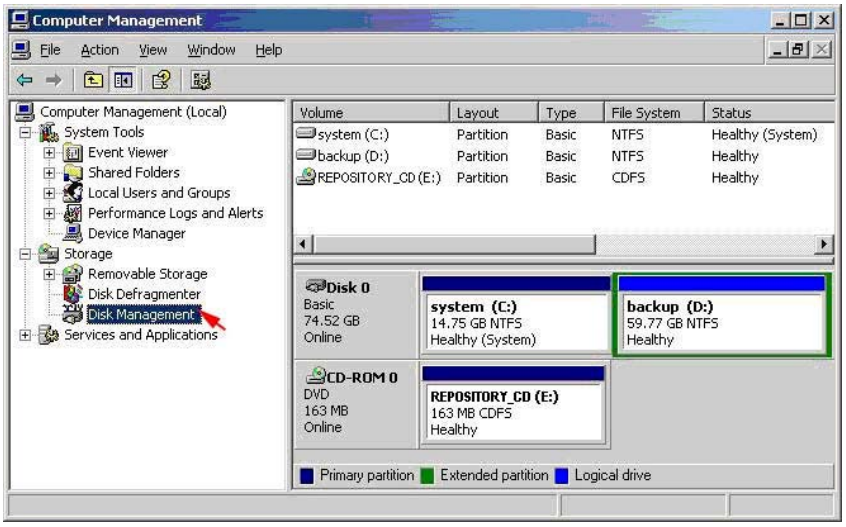
3.5.4 ALLOCATING PARTITIONS

Before creating any partitions, RAID groups must first be created using the SATARaid5Manager utility. Once the sets have been created, allow the system to load Windows.

⌘ Right-click on **My Computer** icon and select **Manage** from the pop-up menu.



⌘ Select **Disk Management** under **Storage** to view the disk drives.



⌘ When **Initialize and Convert Disk Wizard** appears, click **Next**.

Initialize and Convert Disk Wizard
Welcome to the Initialize and Convert Disk Wizard
This wizard helps you to initialize new disks and to convert empty basic disks to dynamic disks.
You can use dynamic disks to create software-based volumes that can be mirrored, or they can be striped or spanned across multiple disks. You can also expand single-disk and spanned volumes without having to restart the computer.
After you convert a disk to dynamic, you can only use Windows 2000 and later versions of Windows on any volume of that disk.
To continue, click Next.
< Back
Next >
Cancel

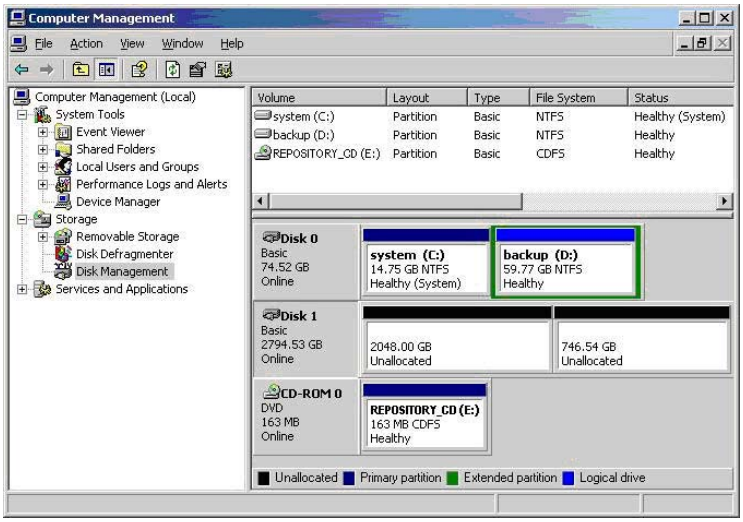
⌘ Select the new disk to initialize, than click **Next**.

⌘ Do not click any disk to convert, than click **Next**.

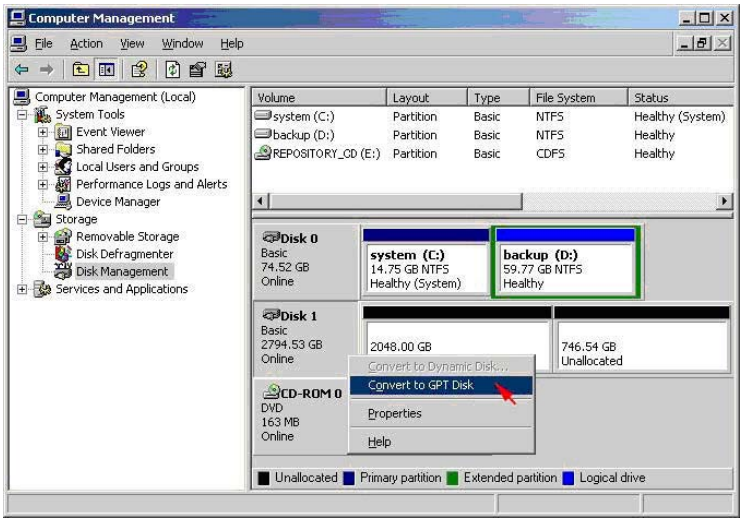
⌘ When the **Initialize and Convert Disk Wizard** has completed, click **Finish**.

Initialize and Convert Disk Wizard
Completing the Initialize and Convert Disk Wizard
You have successfully completed the Initialize and Convert Disk Wizard.
You selected the following settings:
Initialize to MBR: Disk 1
Convert: None
To close this wizard, click Finish.
< Back
Finish
Cancel

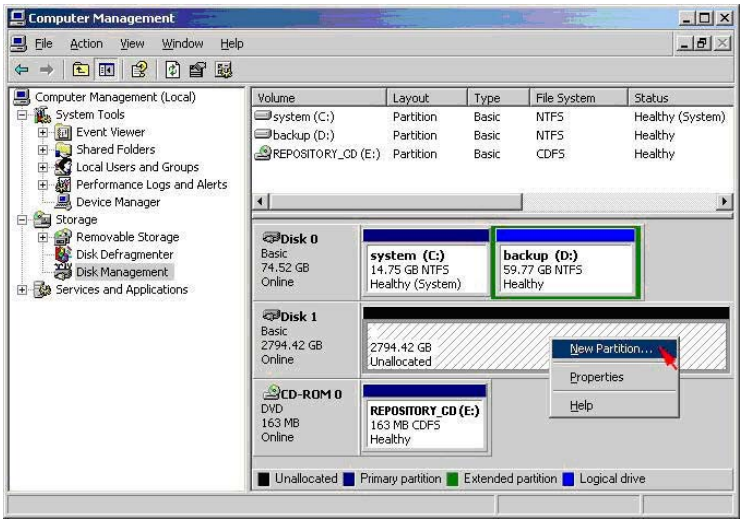
⌘ Windows Server 2003 SP1 or later system supports **GPT disk** which supports disk volume greater than 2TB.



⌘ Right-click on the **Basic disk** and select **Convert to GPT disk** from the pop-up menu.



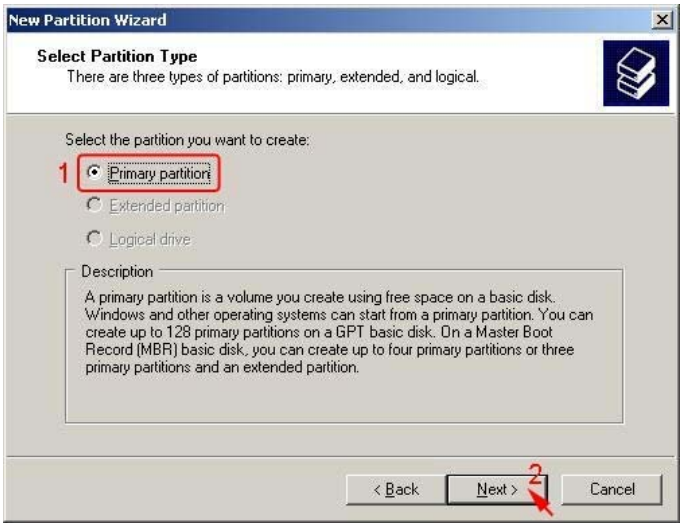
⌘ Right-click on the **Unallocated** partition and select **New Partition…** from the pop-up menu.



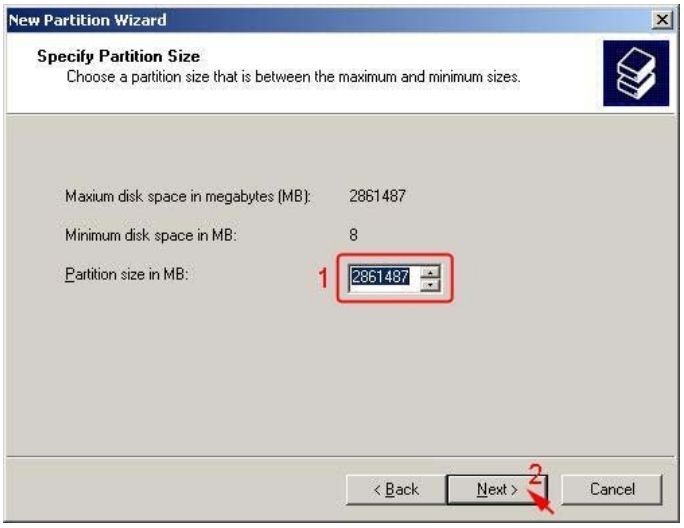
⌘ Click **Next** to create a partition on a basic disk.

New Partition Wizard
Welcome to the New Partition Wizard
This wizard helps you create a partition on a basic disk.
A basic disk is a physical disk that contains primary partitions, extended partitions, and logical drives.
Partitions created on Master Boot Record (MBR) disks can be accessed from any version of Windows or MS-DOS.
Partitions created on GUID Partition Table (GPT) disks can only be accessed from Windows Server 2003 Service Pack 1 or later, or from any 64-bit version of Windows.
To continue, click Next.
< Back
Next >
Cancel

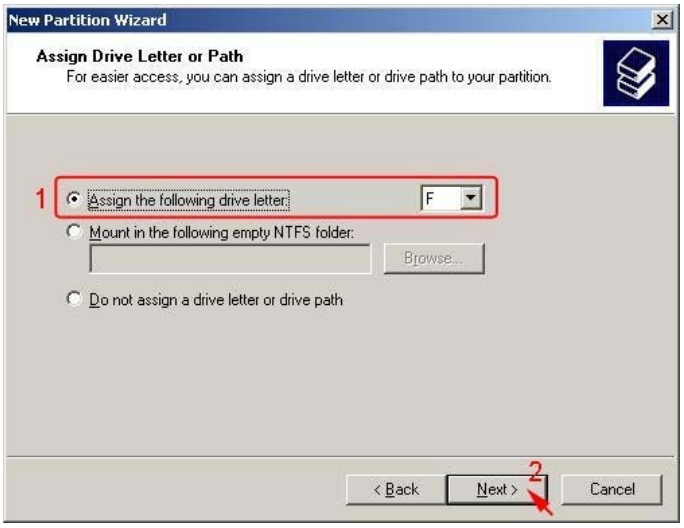
⌘ Select the partition to create, than click **Next**.


New Partition Wizard
Select Partition Type
There are three types of partitions: primary, extended, and logical.
Select the partition you want to create:
1
Primary partition
Extended partition
Logical drive
Description
A primary partition is a volume you create using free space on a basic disk. Windows and other operating systems can start from a primary partition. You can create up to 128 primary partitions on a GPT basic disk. On a Master Boot Record (MBR) basic disk, you can create up to four primary partitions or three primary partitions and an extended partition.
< Back
Next >
2
Cancel

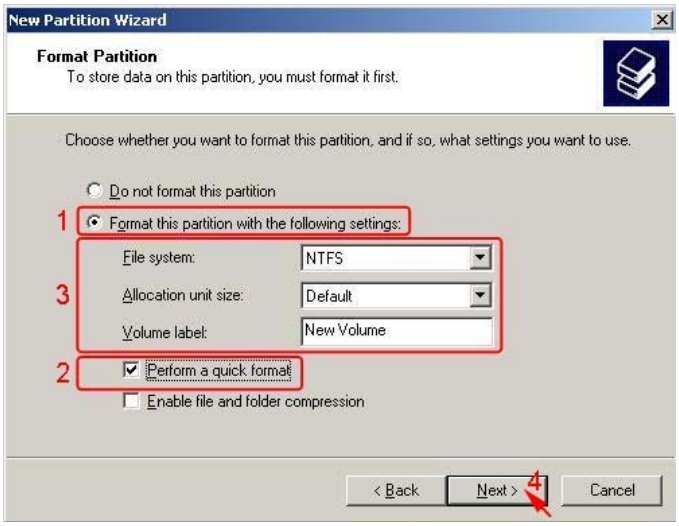
⌘ Specify the partition size you want to create, than click **Next**.



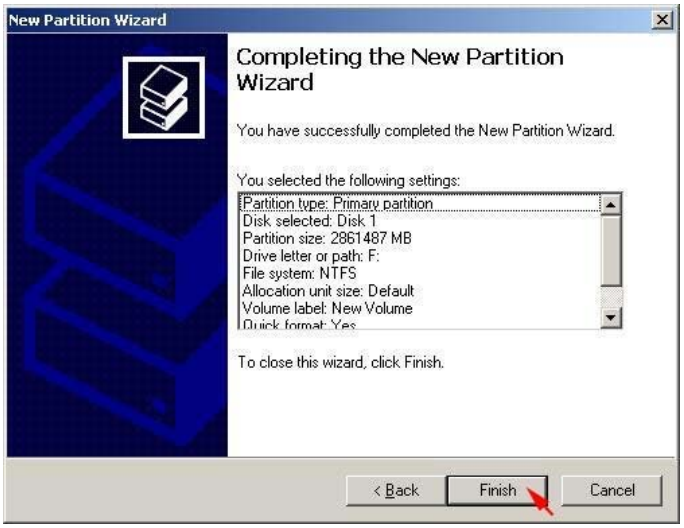
⌘ Assign the drive letter or path you want to create, than click **Next**.


New Partition Wizard
Assign Drive Letter or Path
For easier access, you can assign a drive letter or drive path to your partition.
1
Assign the following drive letter:
F
Mount in the following empty NTFS folder:
Browse...
Do not assign a drive letter or drive path
< Back
Next >
2
Cancel

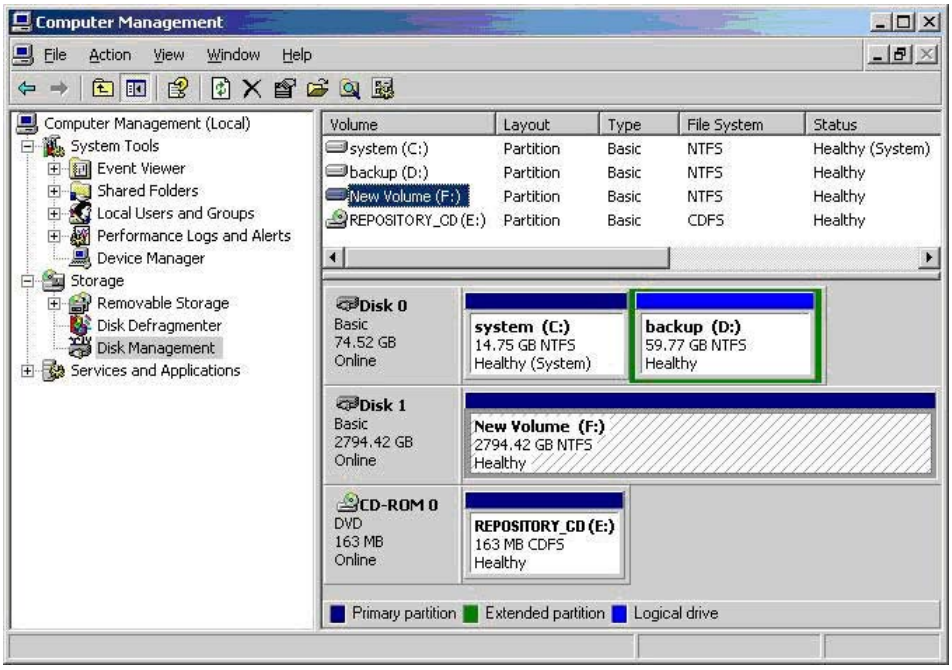
⌘ Click **Format this partition with the following settings** and **Perform a quick format**, setup the **File system**, **Allocation unit size**, **Volume label**, than click **Next**.



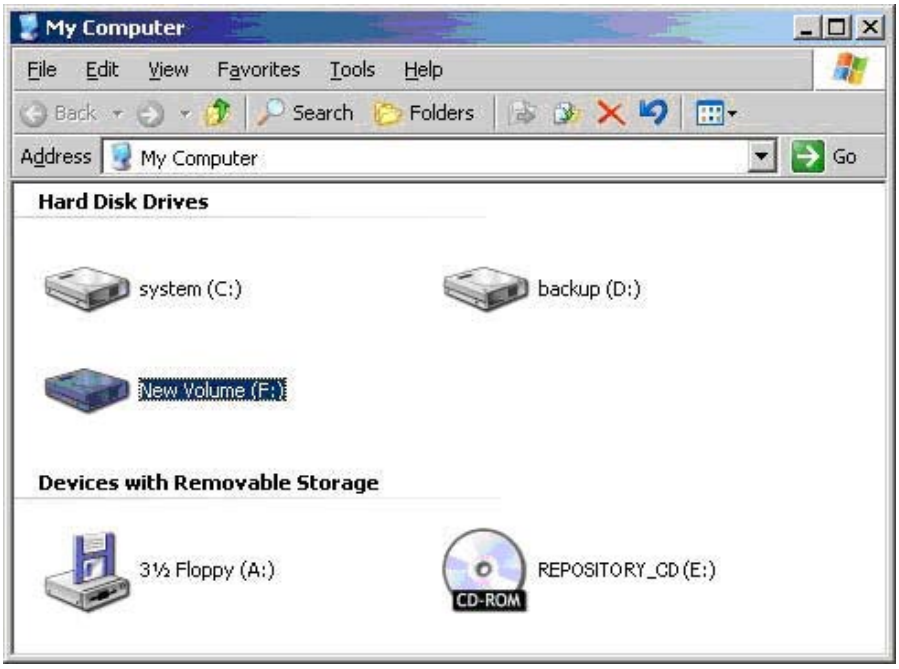
⌘ When the **New Partition Wizard** has completed, click **Finish**.



The status of the newly created partition in the Disk Management window should change to Formatting and the percentage complete will be displayed. Depending upon the size of the partition, the format process may take several minutes. When complete, the status will change to “Healthy” and the name and drive letter will be updated. Once the disk reports Healthy, it appears in the listing in System Listing section with all of its pertinent information as well.



Repeat the above procedure as needed for any other partitions. Close the Data Management window by clicking on the small boxed “X” in the top right corner of the window. Click on the “My Computer” icon on the Desktop. The new drives will be visible and properly named. The new disks are available for use.



3.6 INSTALLING ON WINDOWS VISTA

3.6.1 INSTALLING SATA RAID HOST BUS ADAPTER

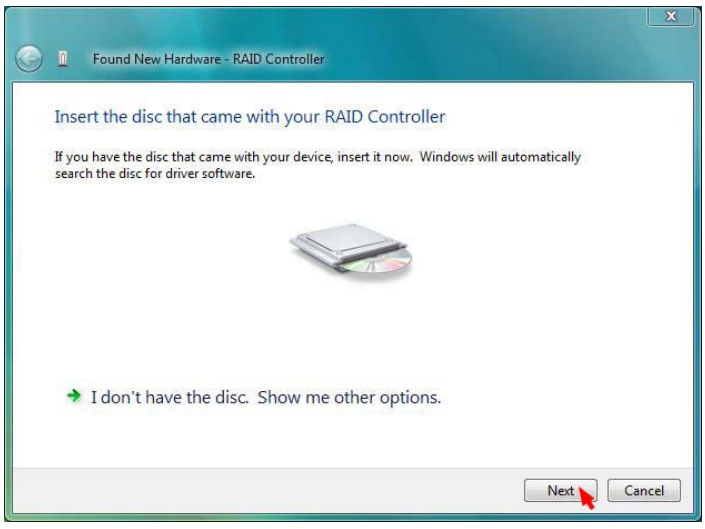
Follow the descriptions below, and step by step to complete the setup.

⌘ Insert the Setup and Installation Driver Repository CD in the CD-ROM drive.

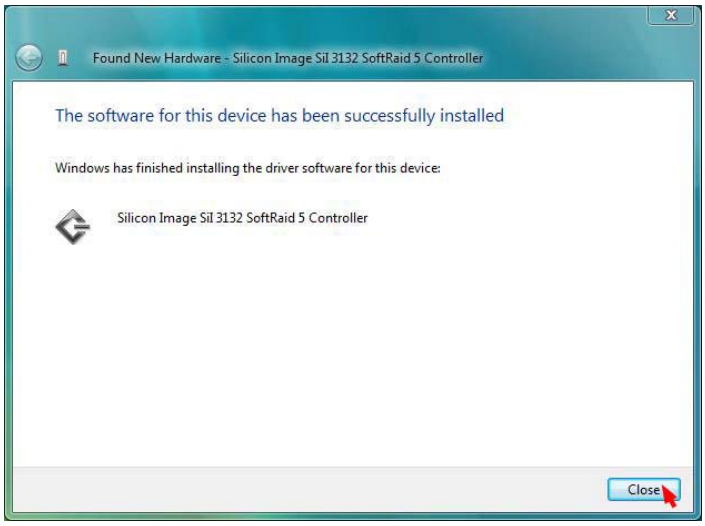
⌘ When start the Windows O/S, new hardware will be found; Select **Locat and install driver software (recommended)**.

Found New Hardware
Windows needs to install driver software for your RAID Controller
Locate and install driver software (recommended)
Windows will guide you through the process of installing driver software for your device.
Ask me again later
Windows will ask again the next time you plug in your device or log on.
Don't show this message again for this device
Your device will not function until you install driver software.
Cancel

⌘ Insert the disc that came with your RAID Controller, than click **Next**.


Found New Hardware - RAID Controller
Insert the disc that came with your RAID Controller
If you have the disc that came with your device, insert it now. Windows will automatically search the disc for driver software.
I don't have the disc. Show me other options.
Next
Cancel

⌘ When the installation has completed, click **Close**.

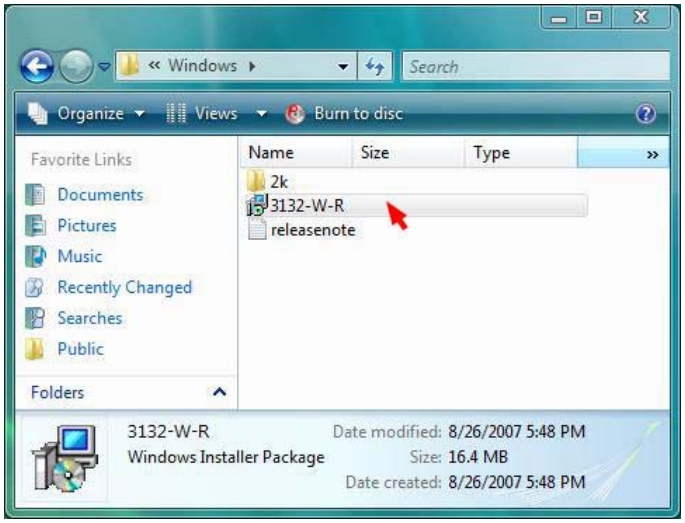

Found New Hardware - Silicon Image SiI 3132 SoftRaid 5 Controller
The software for this device has been successfully installed
Windows has finished installing the driver software for this device:
Silicon Image SiI 3132 SoftRaid 5 Controller
Close

3.6.2 INSTALLING SATARAID5 UTILITY

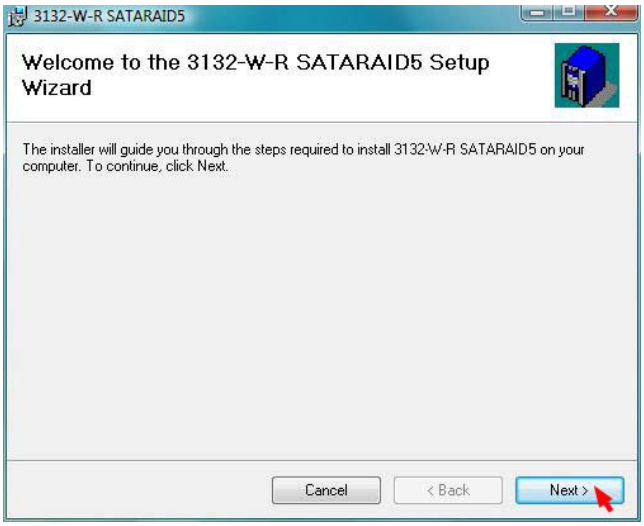
Follow the descriptions below, and step by step to complete the installation.

⌘ Open the Setup and Installation Driver Repository CD and select the SATARAID5 Array Manager software from the Utility folder.

⌘ Double-click the **3132-W-R.msi** file (Located at: E:\Utility\SiI3132R5\Windows\3132-W-R.msi; PS: "E:" = CD-ROM drive letter).



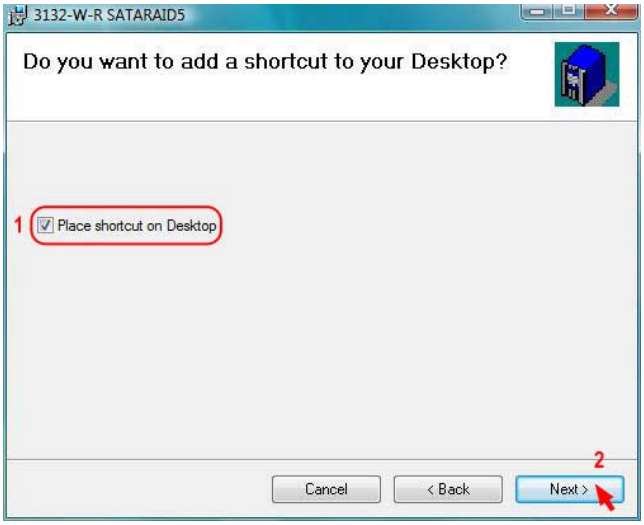
⌘ Click **Next** to begin setup.


3132-W-R SATARAID5
Welcome to the 3132-W-R SATARAID5 Setup Wizard
The installer will guide you through the steps required to install 3132-W-R SATARAID5 on your computer. To continue, click Next.
Cancel
< Back
Next >

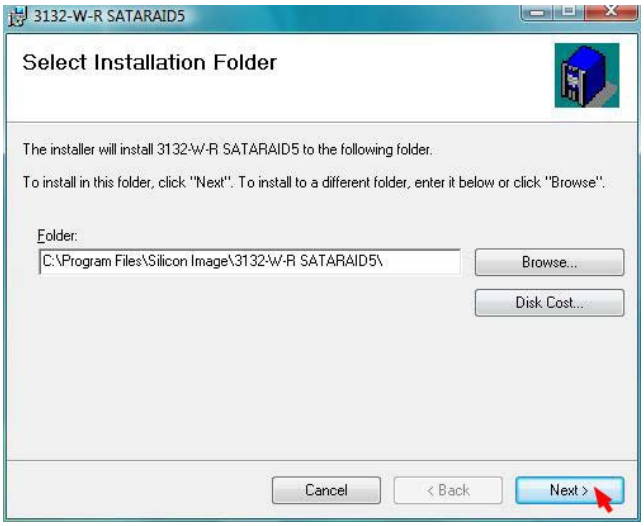
⌘ Select **I Agree**, than click **Next**.

3132-W-R SATARAID5
License Agreement
Please take a moment to read the license agreement now. If you accept the terms below, click "I Agree", then "Next". Otherwise click "Cancel".
Silicon Image, Inc.
SOFTWARE LICENSE AGREEMENT
PLEASE READ THE FOLLOWING TERMS AND CONDITIONS CAREFULLY BEFORE DOWNLOADING, INSTALLING OR USING THE SOFTWARE OR ANY ACCOMPANYING DOCUMENTATION (COLLECTIVELY, THE
I Do Not Agree
1
I Agree
2
Cancel
< Back
Next >

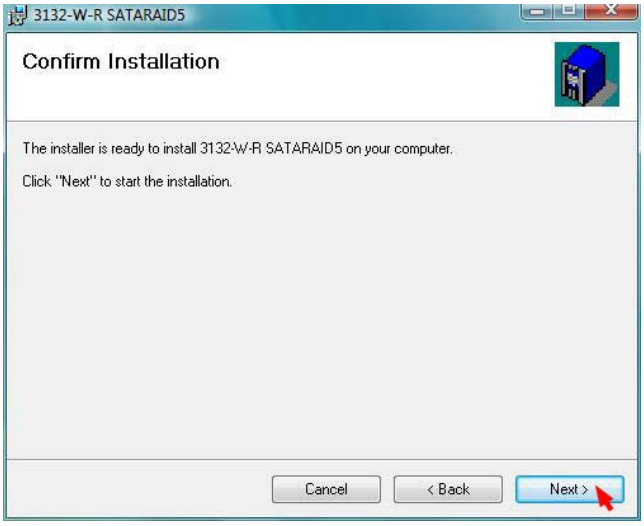
⌘ Select **Place shortcut on Desktop**, than click **Next** to create a shortcut on the desktop.



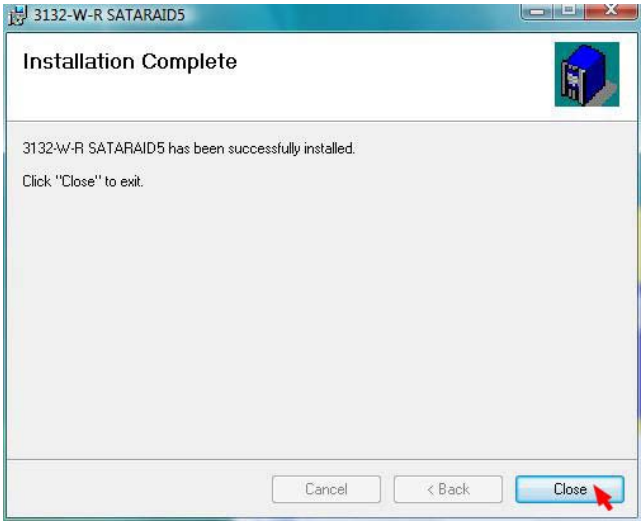
⌘ Click **Next** to use the default installation folder.


3132-W-R SATARAID5
Select Installation Folder
The installer will install 3132-W-R SATARAID5 to the following folder.
To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".
Folder:
C:\Program Files\Silicon Image\3132-W-R SATARAID5\
Browse...
Disk Cost...
Cancel
< Back
Next >

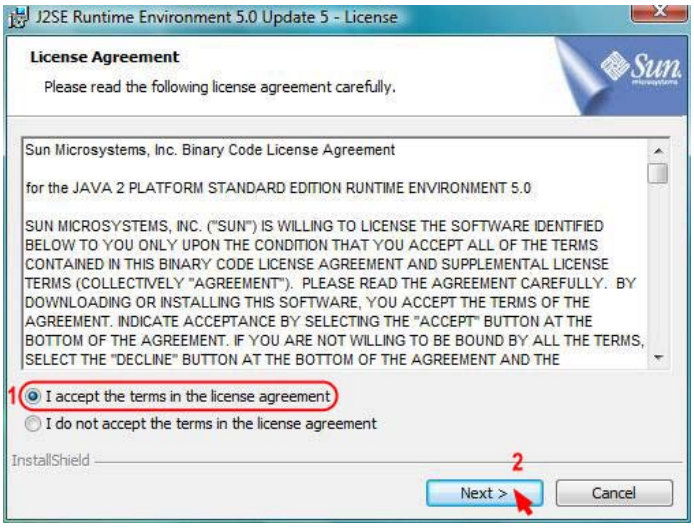
⌘ Click **Next** to begin the installation.


3132-W-R SATARAID5
Confirm Installation
The installer is ready to install 3132-W-R SATARAID5 on your computer.
Click "Next" to start the installation.
Cancel
< Back
Next >

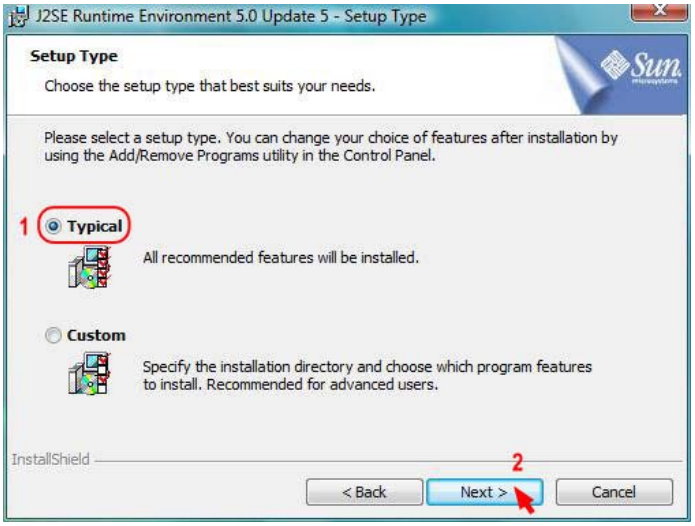
⌘ When the SATARAID5 Utility installation has completed, click **Close**, and begin to the Java installation.



⌘ Select **I accept the terms in the license agreement**, than click **Next**.


J2SE Runtime Environment 5.0 Update 5 - License
License Agreement
Please read the following license agreement carefully.
Sun Microsystems, Inc. Binary Code License Agreement
for the JAVA 2 PLATFORM STANDARD EDITION RUNTIME ENVIRONMENT 5.0
SUN MICROSYSTEMS, INC. ("SUN") IS WILLING TO LICENSE THE SOFTWARE IDENTIFIED BELOW TO YOU ONLY UPON THE CONDITION THAT YOU ACCEPT ALL OF THE TERMS CONTAINED IN THIS BINARY CODE LICENSE AGREEMENT AND SUPPLEMENTAL LICENSE TERMS (COLLECTIVELY "AGREEMENT"). PLEASE READ THE AGREEMENT CAREFULLY. BY DOWNLOADING OR INSTALLING THIS SOFTWARE, YOU ACCEPT THE TERMS OF THE AGREEMENT. INDICATE ACCEPTANCE BY SELECTING THE "ACCEPT" BUTTON AT THE BOTTOM OF THE AGREEMENT. IF YOU ARE NOT WILLING TO BE BOUND BY ALL THE TERMS, SELECT THE "DECLINE" BUTTON AT THE BOTTOM OF THE AGREEMENT AND THE
1
I accept the terms in the license agreement
I do not accept the terms in the license agreement
InstallShield
2
Next >
Cancel

⌘ Select **Typical**, than click **Next**.


J2SE Runtime Environment 5.0 Update 5 - Setup Type
Setup Type
Choose the setup type that best suits your needs.
Please select a setup type. You can change your choice of features after installation by using the Add/Remove Programs utility in the Control Panel.
1
Typical
All recommended features will be installed.
Custom
Specify the installation directory and choose which program features to install. Recommended for advanced users.
InstallShield
2
< Back
Next >
Cancel

⌘ When Java platform installation has completed, click **Finish** to exit.

J2SE Runtime Environment 5.0 Update 5 - Complete
Installation Completed
The Install Wizard has successfully installed J2SE Runtime Environment 5.0 Update 5. Click Finish to exit the wizard.
Sun
Java
< Back
Finish
Cancel

⌘ Select **Start** > **All Programs** > **Silicon Image** > **SATARaid5Manager** to start the Array Manager software.

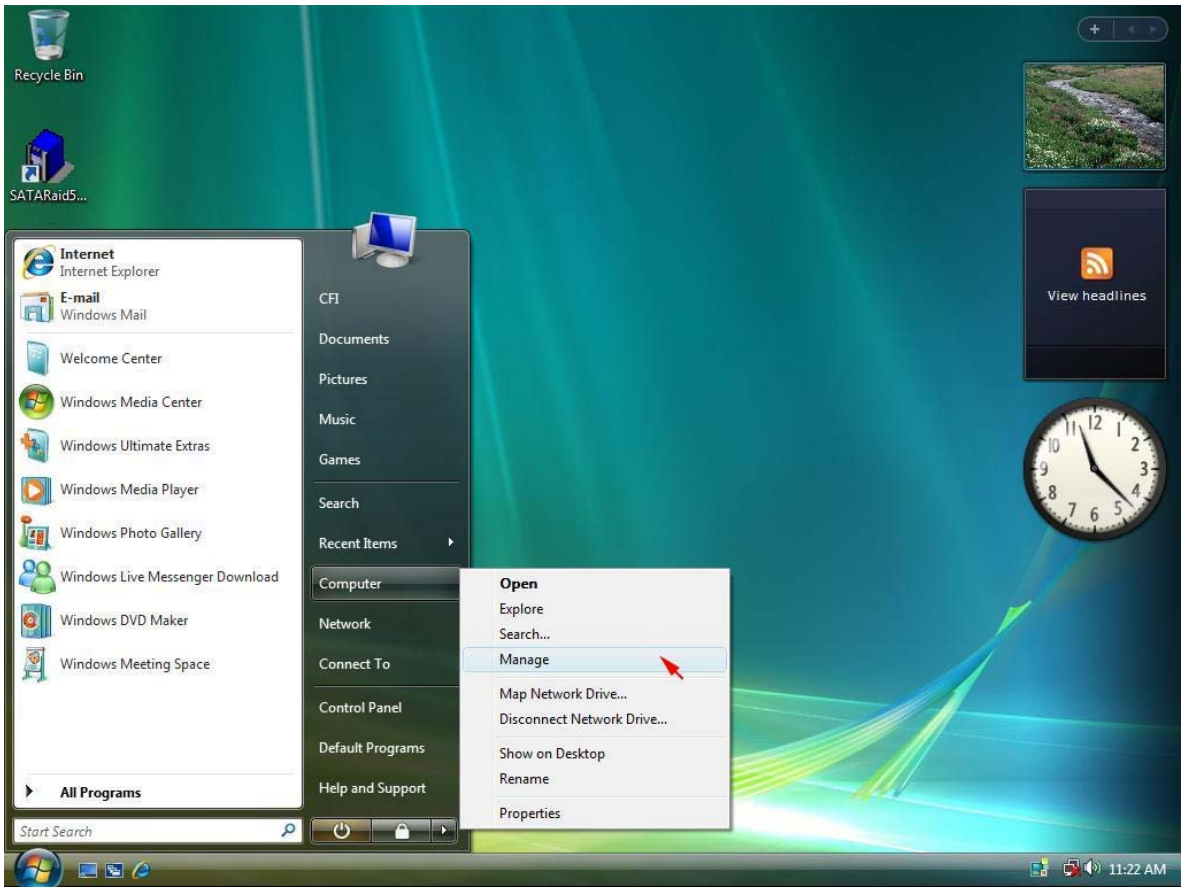
3.6.3 DISK DRIVE MODE SETUP

Please refer to the chapter 4.

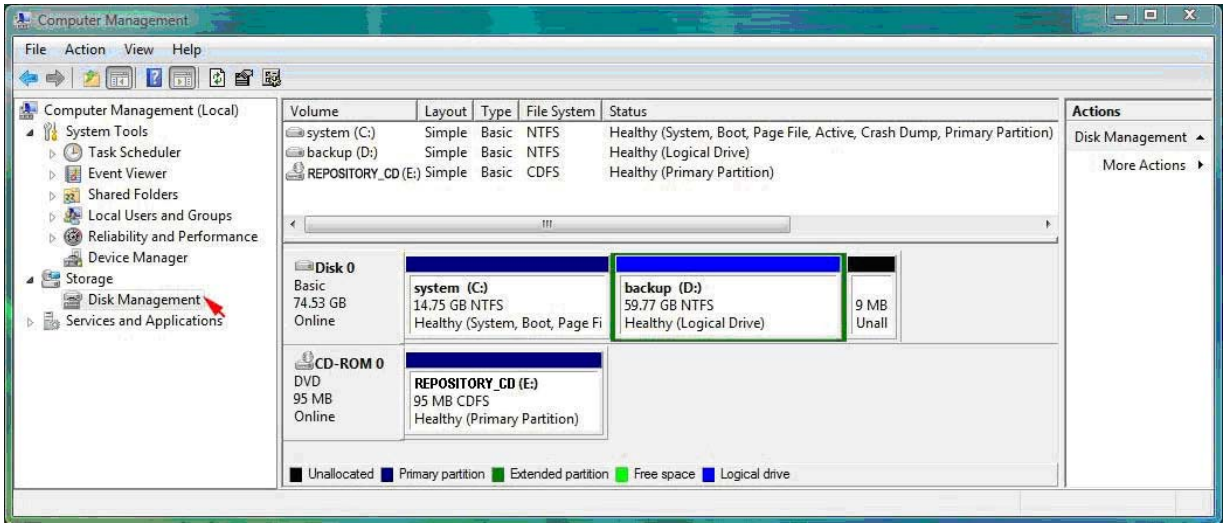
3.6.4 ALLOCATING PARTITIONS

Before creating any partitions, RAID groups must first be created using the SATARaid5Manager utility. Once the sets have been created, allow the system to load Windows.

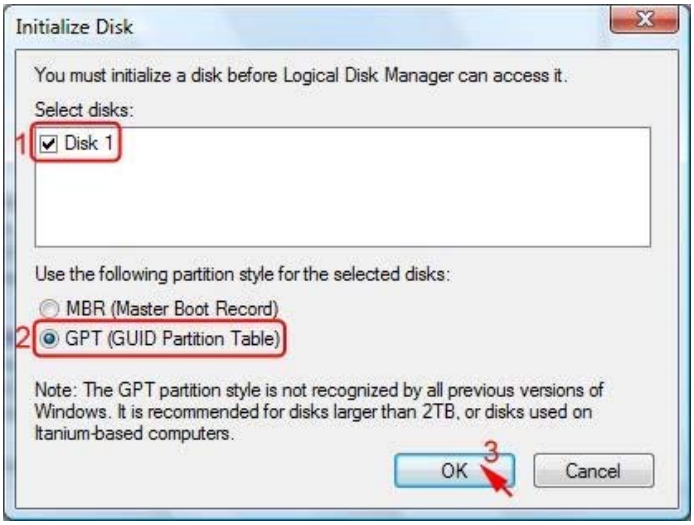
⌘ Right-click on **My Computer** icon and select **Manage** from the pop-up menu.



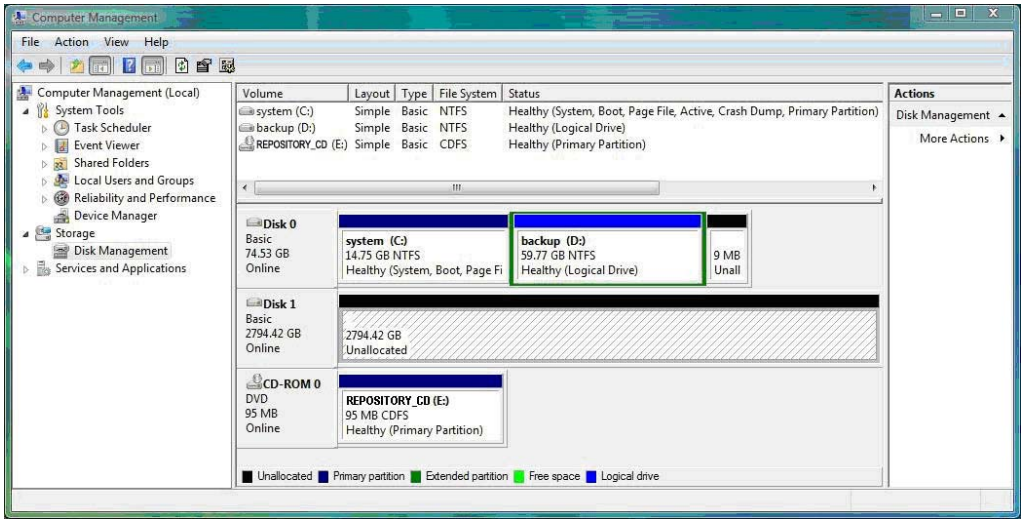
⌘ Select **Disk Management** under **Storage** to view the disk drives.



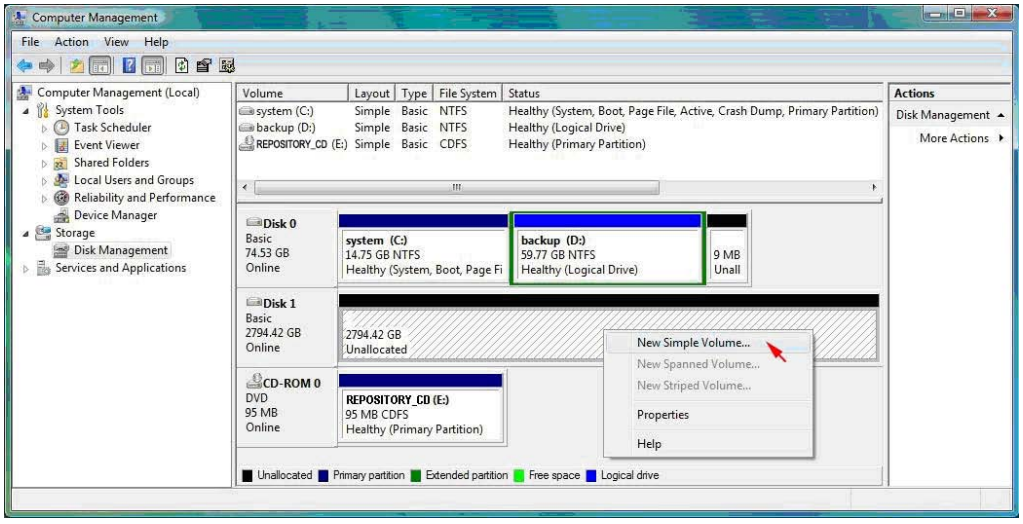
⌘ When **Initialize Disk Wizard** appears, select **Disk 1** and **GPT (GUID Partition Table)**, than click **OK**.


Initialize Disk
You must initialize a disk before Logical Disk Manager can access it.
Select disks:
1
Disk 1
Use the following partition style for the selected disks:
MBR (Master Boot Record)
2
GPT (GUID Partition Table)
Note: The GPT partition style is not recognized by all previous versions of Windows. It is recommended for disks larger than 2TB, or disks used on Itanium-based computers.
3
OK
Cancel

⌘ Windows Vista system supports **GPT disk** which supports disk volume greater than 2TB.



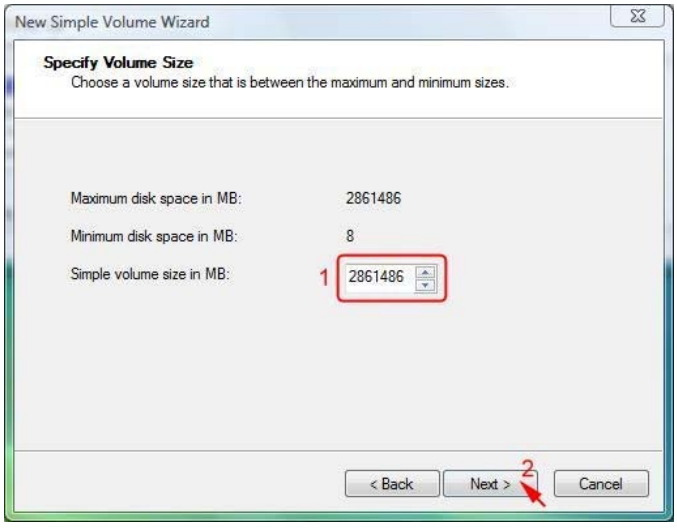
⌘ Right-click on the **Unallocated** partition and select **New Single Volume…** from the pop-up menu.



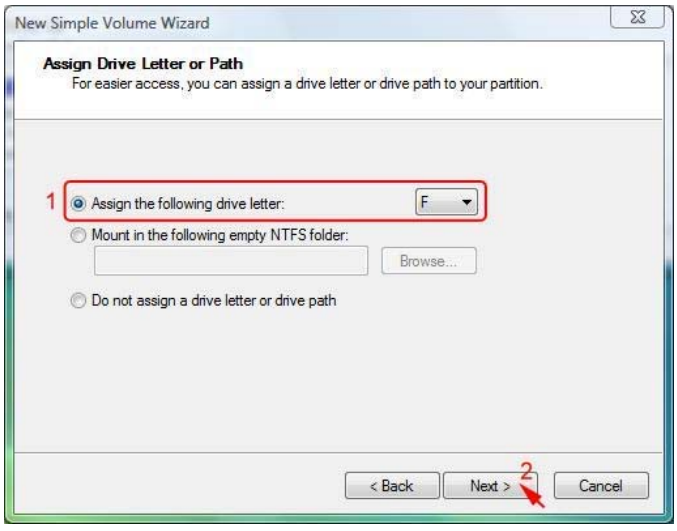
⌘ Click **Next** to create the partition.

New Simple Volume Wizard
Welcome to the New Simple Volume Wizard
This wizard helps you create a simple volume on a disk.
A simple volume can only be on a single disk.
To continue, click Next.
< Back
Next >
Cancel

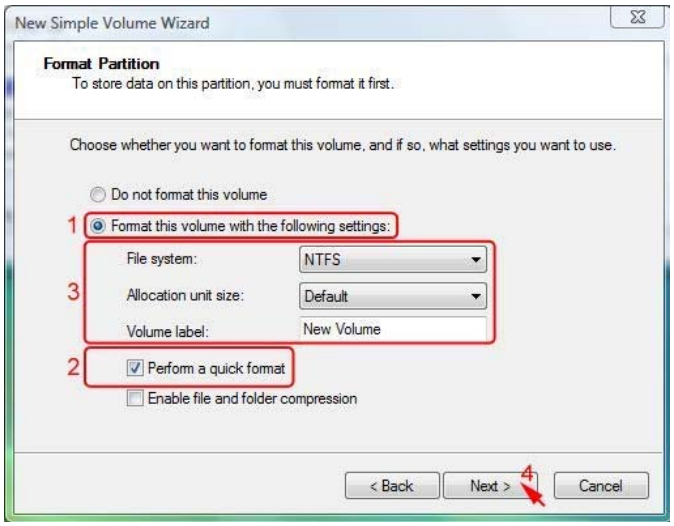
⌘ Specify the partition size you want to create, than click **Next**.


New Simple Volume Wizard
Specify Volume Size
Choose a volume size that is between the maximum and minimum sizes.
Maximum disk space in MB: 2861486
Minimum disk space in MB: 8
Simple volume size in MB: 2861486
1
2
< Back
Next >
Cancel

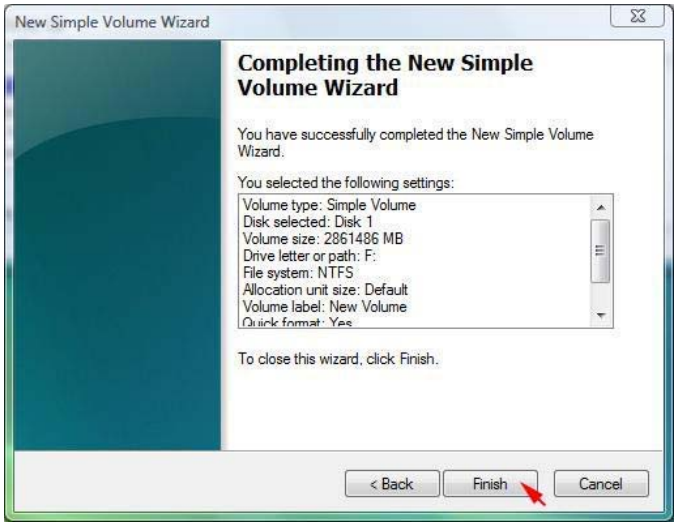
⌘ Assign the drive letter or path you want to create, than click **Next**.


New Simple Volume Wizard
Assign Drive Letter or Path
For easier access, you can assign a drive letter or drive path to your partition.
1
Assign the following drive letter: F
Mount in the following empty NTFS folder:
Browse...
Do not assign a drive letter or drive path
2
< Back
Next >
Cancel

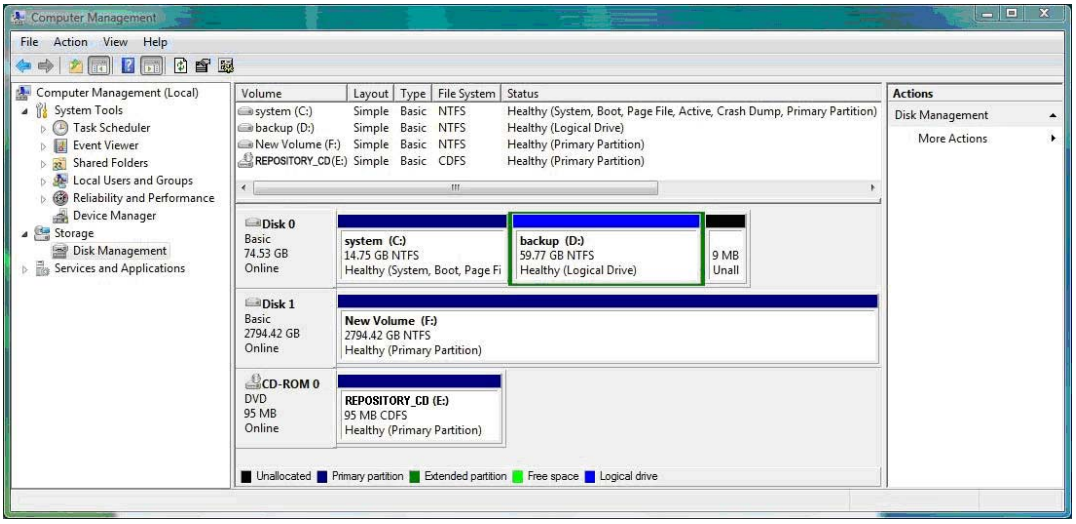
⌘ Click **Format this partition with the following settings** and **Perform a quick format**, setup the **File system**, **Allocation unit size**, **Volume label**, than click **Next**.



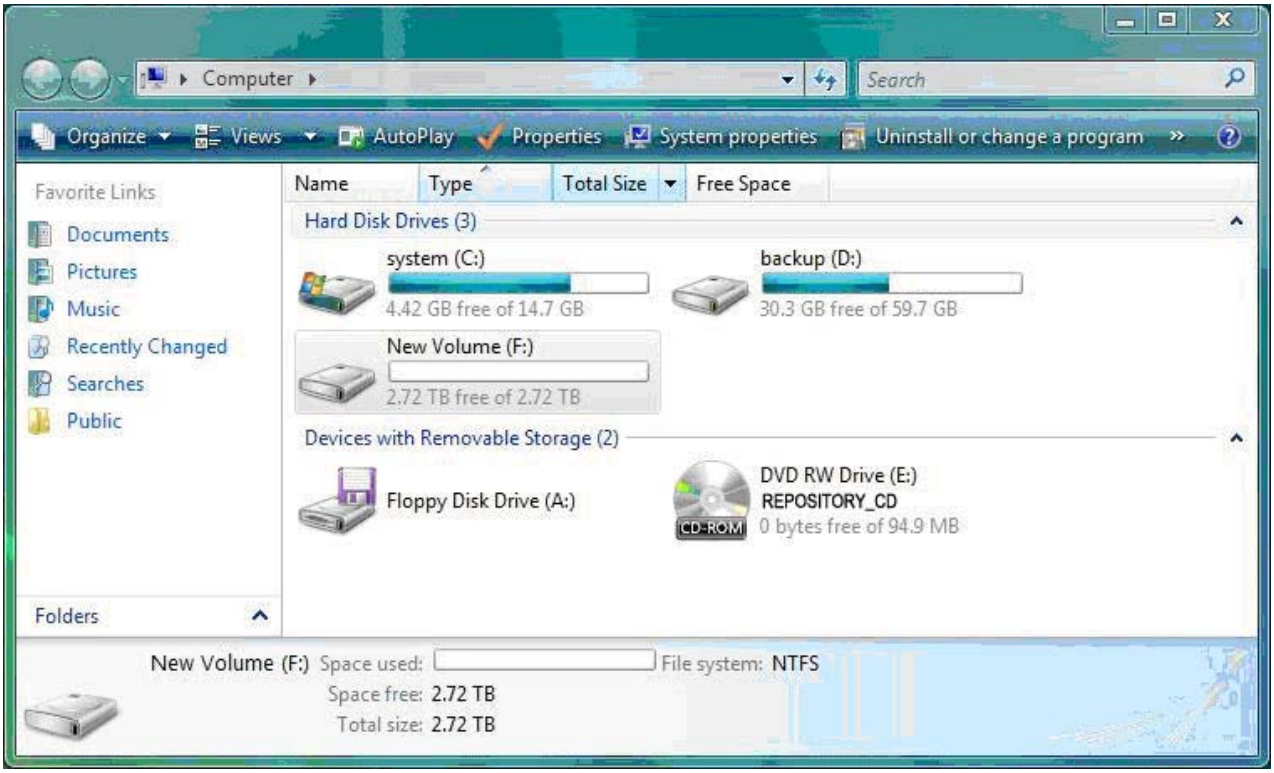
⌘ When the **New Partition Wizard** has completed, click **Finish**.


New Simple Volume Wizard
Completing the New Simple Volume Wizard
You have successfully completed the New Simple Volume Wizard.
You selected the following settings:
Volume type: Simple Volume
Disk selected: Disk 1
Volume size: 2861486 MB
Drive letter or path: F:
File system: NTFS
Allocation unit size: Default
Volume label: New Volume
Quick format: Yes
To close this wizard, click Finish.
< Back
Finish
Cancel

The status of the newly created partition in the Disk Management window should change to Formatting and the percentage complete will be displayed. Depending upon the size of the partition, the format process may take several minutes. When complete, the status will change to “Healthy” and the name and drive letter will be updated. Once the disk reports Healthy, it appears in the listing in System Listing section with all of its pertinent information as well.



Repeat the above procedure as needed for any other partitions. Close the Data Management window by clicking on the small boxed “X” in the top right corner of the window. Click on the “My Computer” icon on the Desktop. The new drives will be visible and properly named. The new disks are available for use.



3.7 INSTALLING ON MACINTOSH OS X

3.7.1 RELEASE NOTES

This is the premier release for the Silicon Image SATARaid5 Storage Solution for Macintosh, the following issues are known to exsit in this version.

Item	Description	Solution
1	Occasionally on Macintosh systems, the system will experience problems resuming from a sleep state	The problem can be recovered by powering off the system and rebooting. This problem has not been seen to occur if the "Allow Power Button to Sleep the Computer" option is disabled in the Energy Saver -> Options -> Wake Options section of the System Preferences.
2	Under certain error conditions, the Manager may ask the user to input an IP address to access the machine.	Enter either the local IP address (preferred - 127.0.0.1) or an IP address as shown in *ifconfig*.
3	If a Create RAID Group option is cancelled while in progress, the create process may restart on the next power up if the disks have not been used to create another RAID Group.	The undesired Create RAID Group task can be cancelled. If the disks are used to create another RAID Group, this problem should not occur.

These issues are expected to be fixed in the next release.

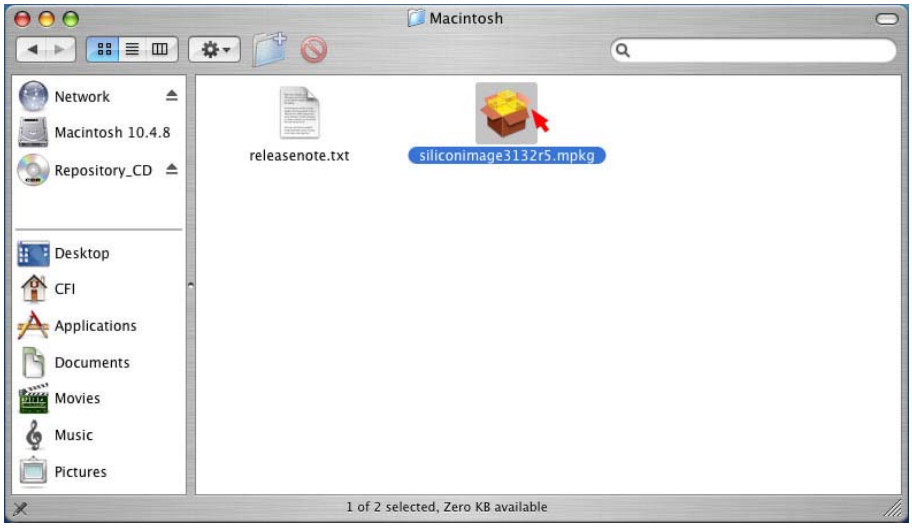
3.7.2 INSTALLING SATA RAID HOST BUS ADAPTER AND SATARAID5 UTILITY

Follow the descriptions below, and step by step to complete the setup.

⌘ Insert the **Setup and Installation Driver Repository CD** in the CD-ROM drive.

⌘ When start the Mac O/S, double-click on the **Setup and Installation Driver Repository CD** icon.

⌘ Double-click the **siliconimage3132r5.mpkg** file to begin the installation (Located at: E:\Utility\SiI3132R5\Macintosh\siliconimage3132r5.mpkg; PS: "E:" = CD-ROM drive letter).



⌘ Once started, the following dialog screens will appear, Click **Continue**.

Install Silicon Image 3132 SATARaid5 Storage Solution
Welcome to the Silicon Image 3132 SATARaid5 Storage Solution Installer
Introduction
License
Select Destination
Installation Type
Install
Finish Up
Welcome to the Silicon Image SATARaid5 Installation Package.
This will install the SATARaid5 storage driver and management software on this computer. Please see the Quick Install Guide and User Manual for details on how to configure volumes after installing this package.
Go Back
Continue

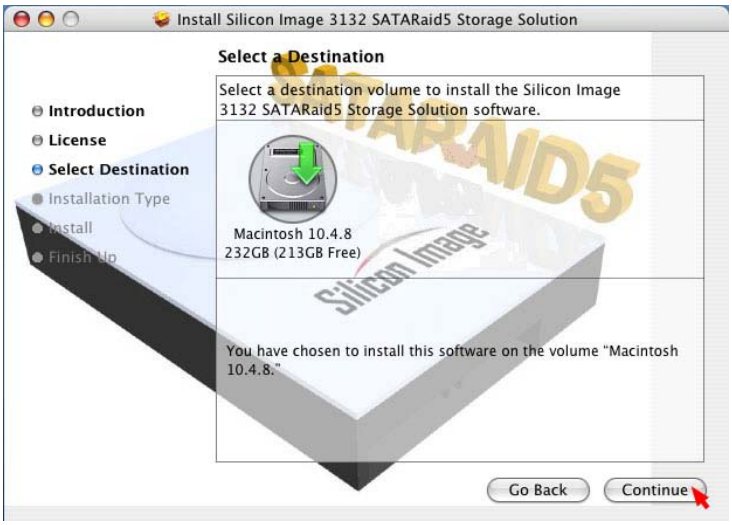
⌘ Read the Software License Agreement**,** than click **Continue**.

Install Silicon Image 3132 SATARaid5 Storage Solution
Software License Agreement
Introduction
License
Select Destination
Installation Type
Install
Finish Up
English
Silicon Image, Inc.
SOFTWARE LICENSE AGREEMENT
PLEASE READ THE FOLLOWING TERMS AND CONDITIONS CAREFULLY BEFORE DOWNLOADING, INSTALLING OR USING THE SOFTWARE OR ANY ACCOMPANYING DOCUMENTATION (COLLECTIVELY, THE "SOFTWARE").
THE TERMS AND CONDITIONS OF THIS SOFTWARE LICENSE AGREEMENT ("AGREEMENT") GOVERN USE OF THE SOFTWARE UNLESS YOU AND SILICON IMAGE, INC. ("COMPANY") HAVE EXECUTED A SEPARATE AGREEMENT.
Company is willing to license the Software to you only upon the condition that you accept all the terms contained in this Agreement. By clicking on the "Yes" button below or by downloading, installing or using the Software, you have indicated that you understand this Agreement and accept all of its terms. If you do not accept all the terms of this Agreement, then Company is unwilling to license the Software to you.
Print...
Save...
Go Back
Continue

⌘ Click **Agree** to continue the installation.

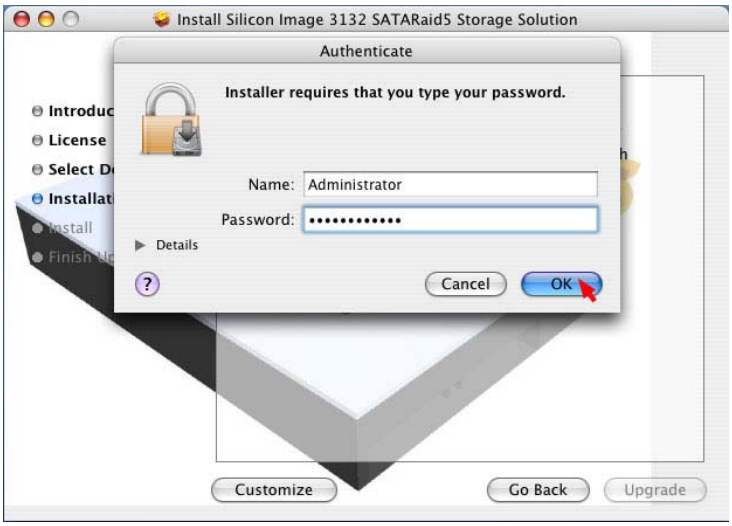
Install Silicon Image 3132 SATARaid5 Storage Solution
To continue installing the software, you must agree to the terms of the software license agreement.
Click Agree to continue or click Disagree to cancel the installation.
Disagree
Agree
DOCUMENTATION (COLLECTIVELY, THE "SOFTWARE").
THE TERMS AND CONDITIONS OF THIS SOFTWARE LICENSE AGREEMENT ("AGREEMENT") GOVERN USE OF THE SOFTWARE UNLESS YOU AND SILICON IMAGE, INC. ("COMPANY") HAVE EXECUTED A SEPARATE AGREEMENT.
Company is willing to license the Software to you only upon the condition that you accept all the terms contained in this Agreement. By clicking on the "Yes" button below or by downloading, installing or using the Software, you have indicated that you understand this Agreement and accept all of its terms. If you do not accept all the terms of this Agreement, then Company is unwilling to license the Software to you.
Print...
Save...
Go Back
Continue

⌘ Select a destination volume to install the software, than click **Continue**.

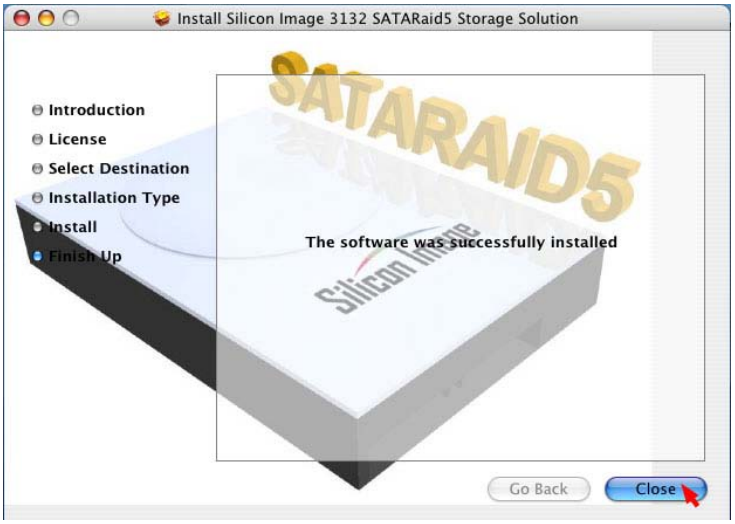


⌘ Click **Install** to begin the installation.

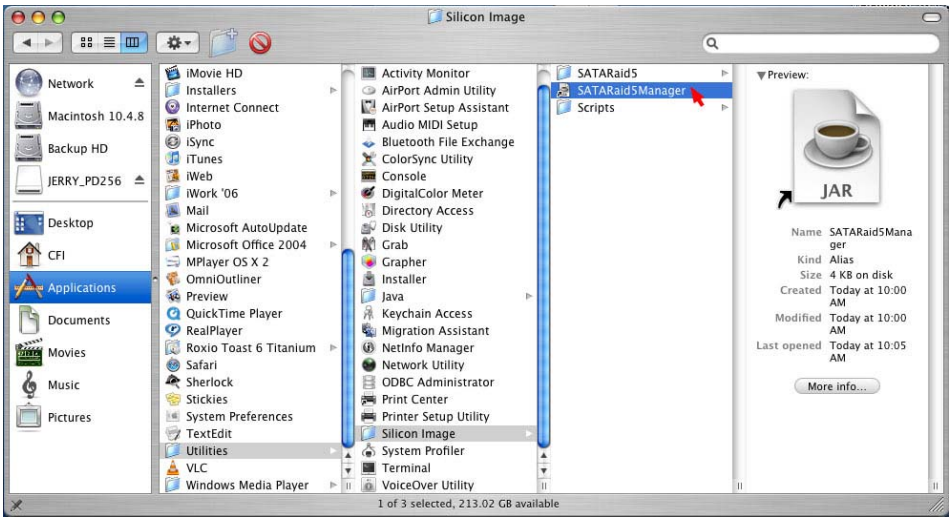
⌘ Enter the Administrative Password for your system, than click **OK**.



⌘ Click **Close** to complete the installation.



⌘ Select **Go** > **Computer** > **Applications** > **Utilities** > **Silicon Image** > **SATARaid5Manager** to start the Array Manager software.

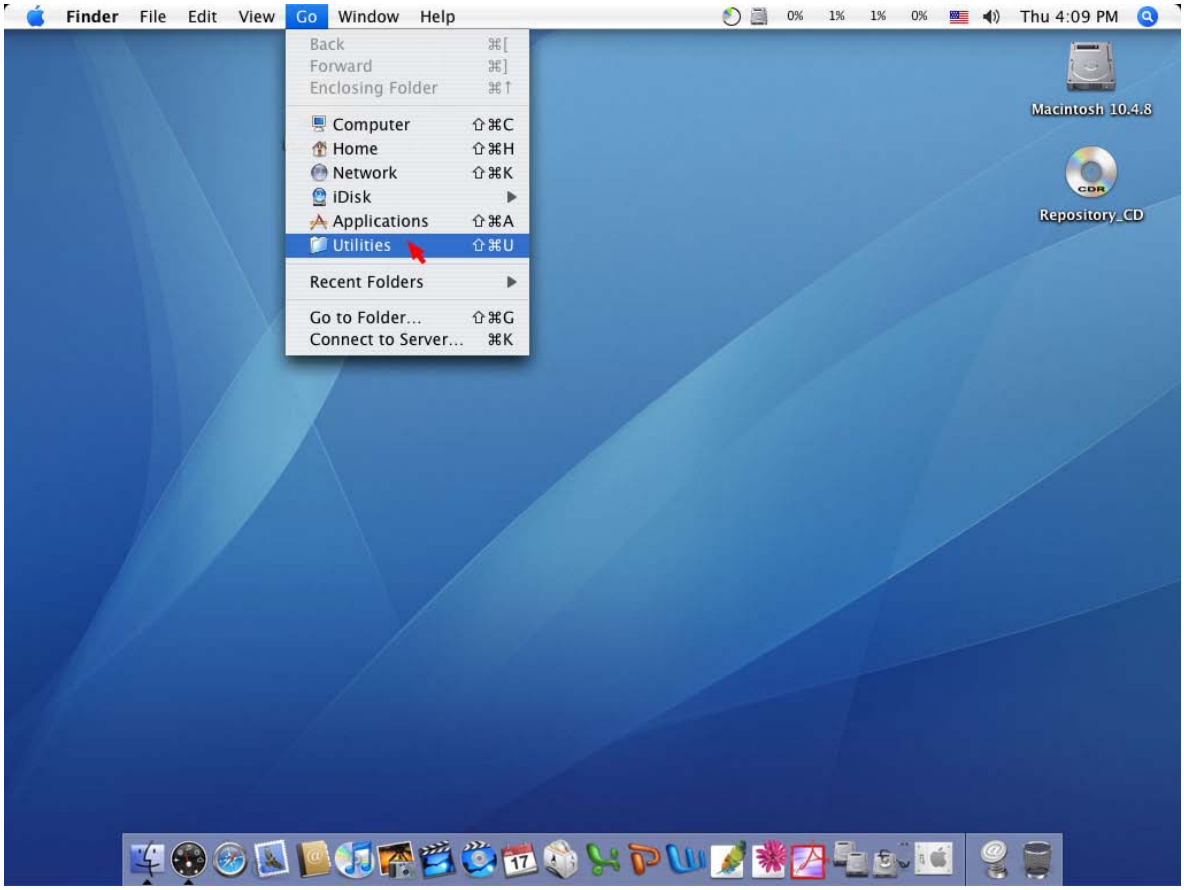


3.7.3 DISK DRIVE MODE SETUP

Please refer to the chapter 4.

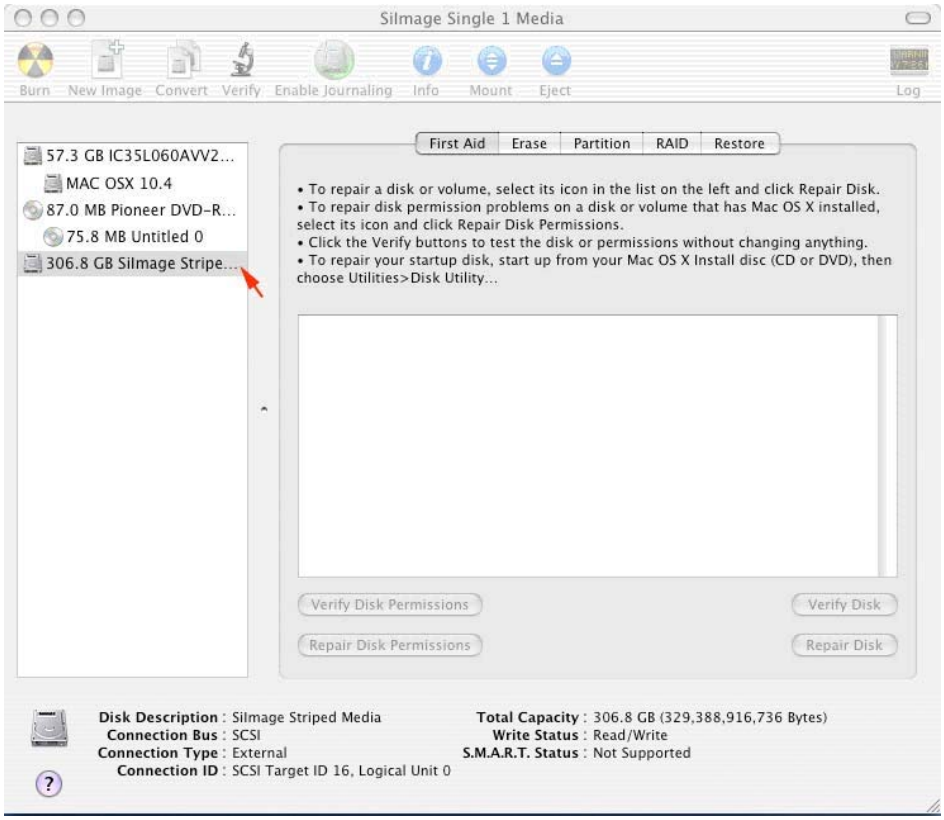
3.7.4 ALLOCATING PARTITIONS

⌘ Click **Go**, than click on **Utilities**.

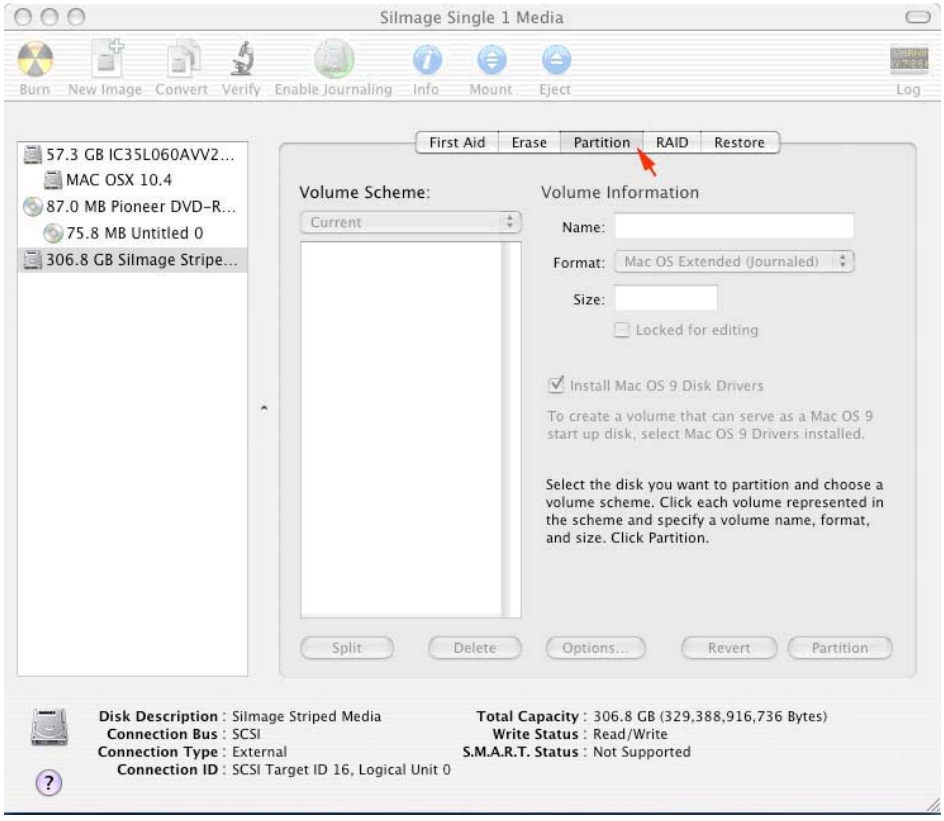


⌘ Double-click **Disk Utility** to go to Disk Utility.

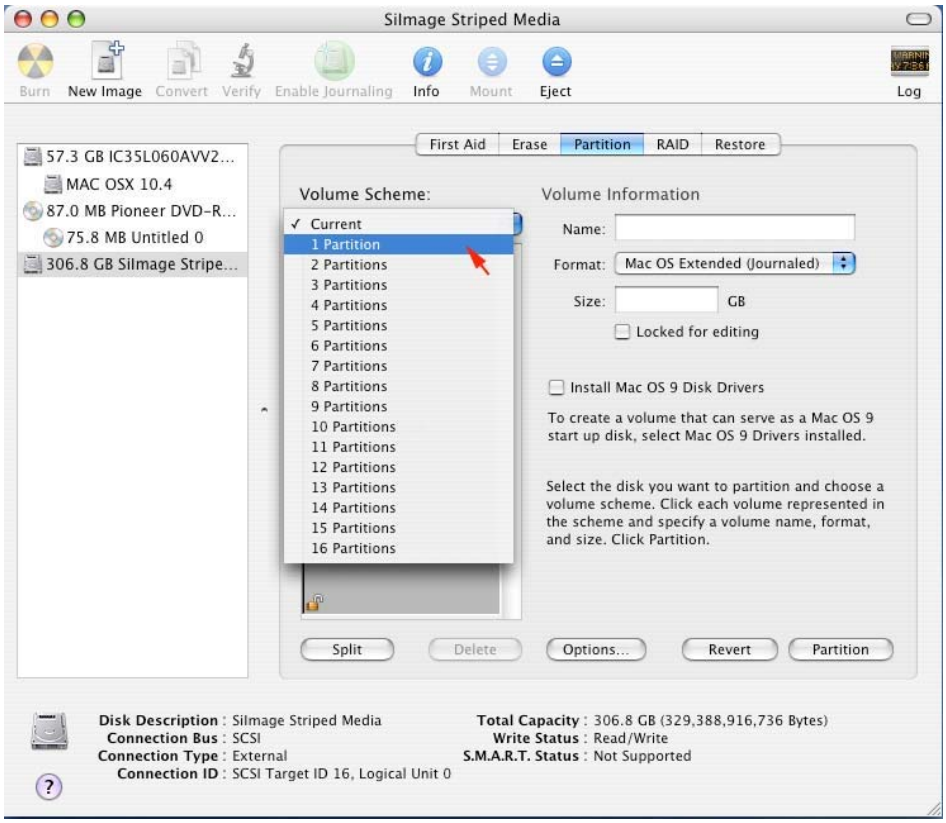
⌘ Select the disk you want to partition (On left side of the window).


Silmage Single 1 Media
Burn
New Image
Convert
Verify
Enable Journaling
Info
Mount
Eject
Log
57.3 GB IC35L060AVV2...
MAC OSX 10.4
87.0 MB Pioneer DVD-R...
75.8 MB Untitled 0
306.8 GB Silmage Stripe...
First Aid
Erase
Partition
RAID
Restore
• To repair a disk or volume, select its icon in the list on the left and click Repair Disk.
• To repair disk permission problems on a disk or volume that has Mac OS X installed, select its icon and click Repair Disk Permissions.
• Click the Verify buttons to test the disk or permissions without changing anything.
• To repair your startup disk, start up from your Mac OS X Install disc (CD or DVD), then choose Utilities>Disk Utility...
Verify Disk Permissions
Verify Disk
Repair Disk Permissions
Repair Disk
Disk Description : Silmage Striped Media
Connection Bus : SCSI
Connection Type : External
Connection ID : SCSI Target ID 16, Logical Unit 0
Total Capacity : 306.8 GB (329,388,916,736 Bytes)
Write Status : Read/Write
S.M.A.R.T. Status : Not Supported

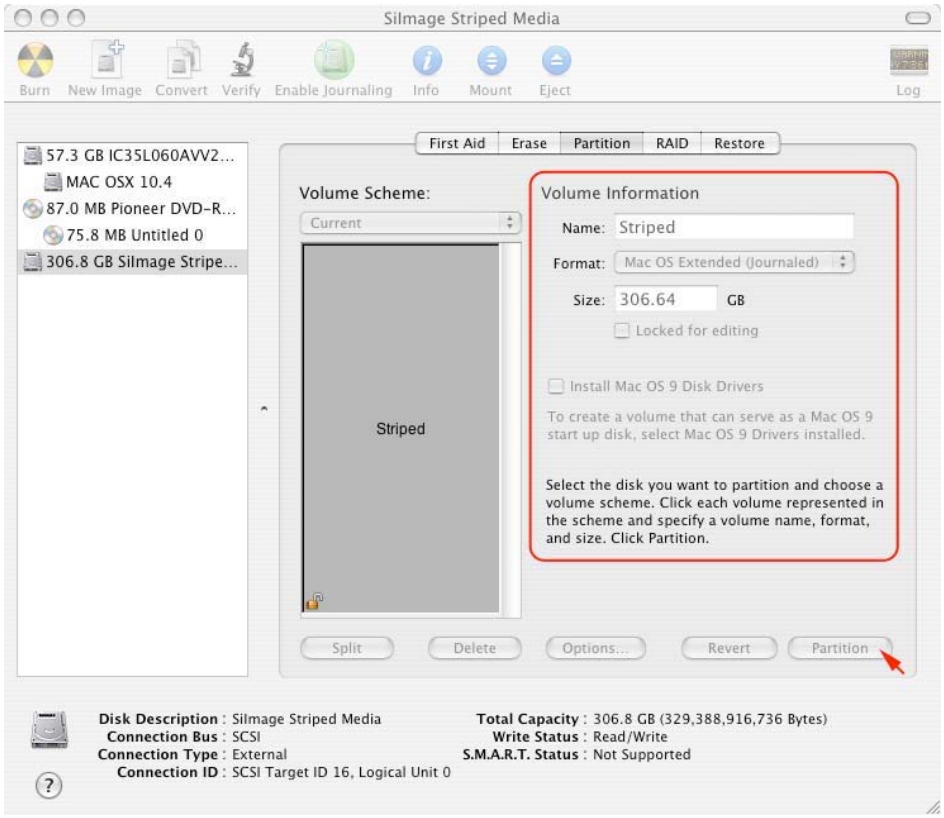
⌘ Click **Partition** to go to partition window (On right side of the window).



⌘ Select **Volumes Scheme**.



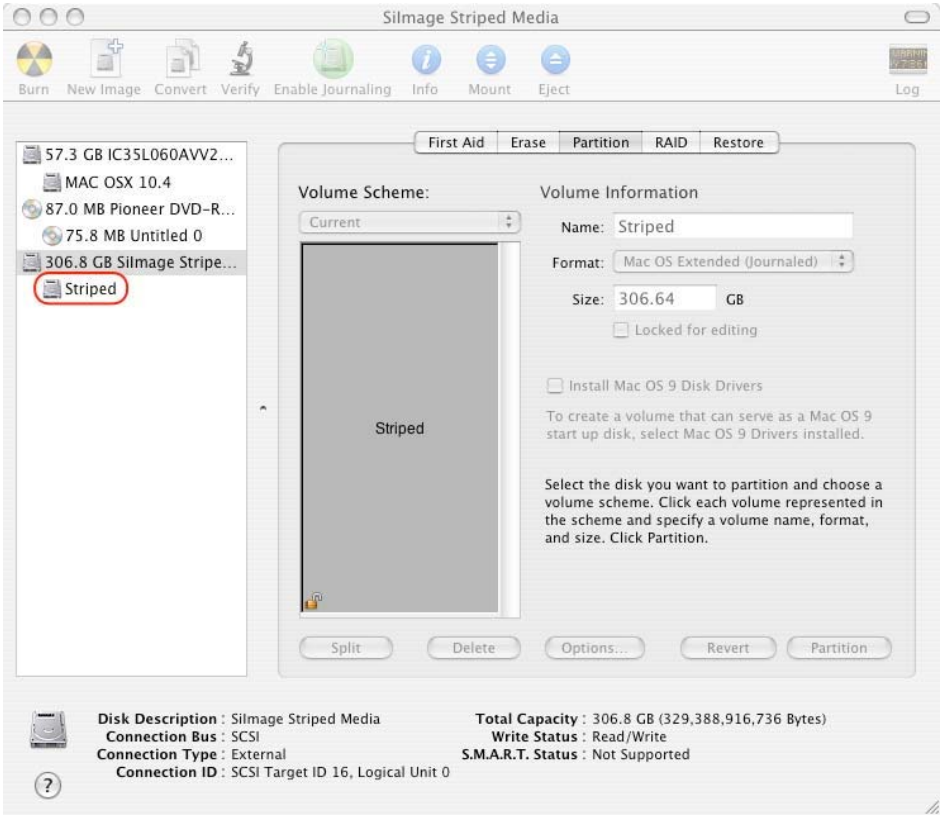
⌘ Enter **Volumes Information**, than click **Partition**.



⌘ Confirm to partition the disk by click **Partition**.

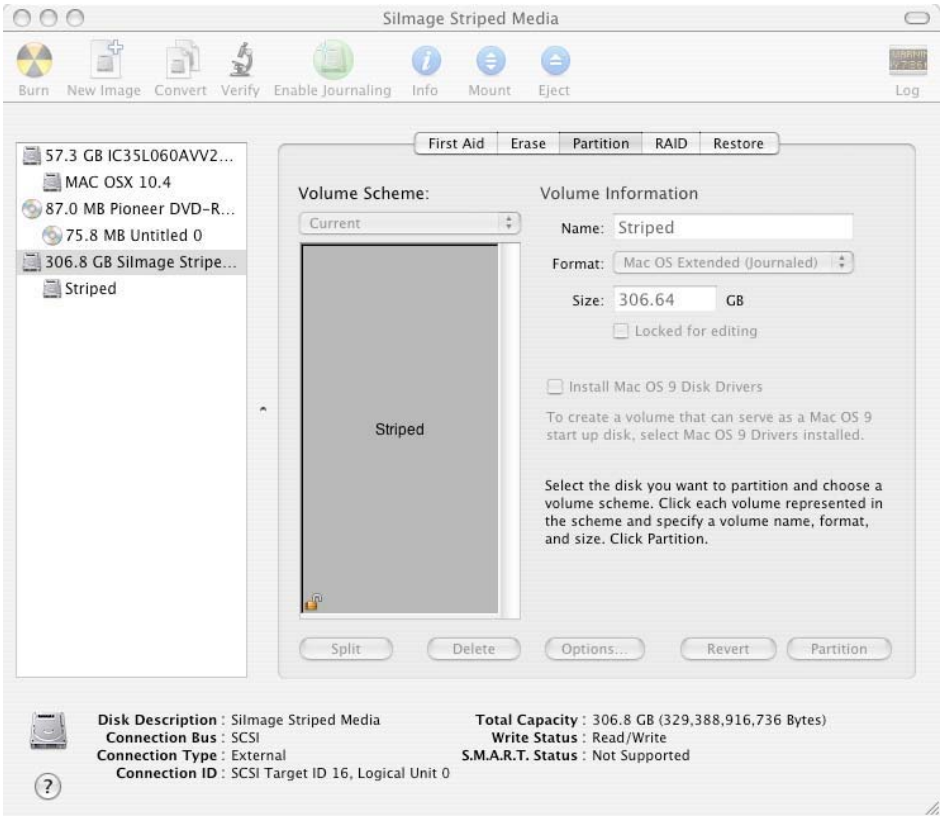
Partition Disk
Partitioning a disk will destroy all information on the disk.
Are you sure you wish to erase the disk "Silmage Striped Media"?
Cancel
Partition

⌘ The new Striped disk has complete.



⌘ Repeat the above procedure as needed for any other disks.

⌘ Close the Disk Utility window after complete setting.

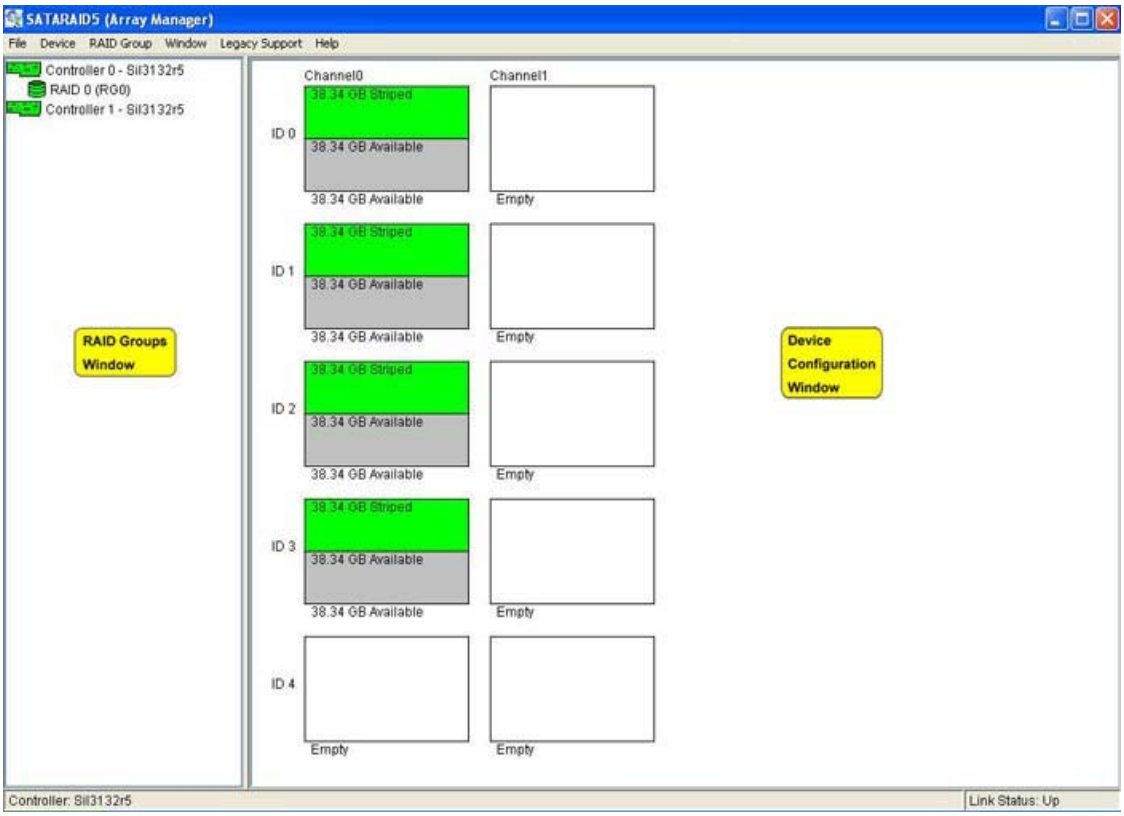


⌘ The new disks will appear on the desktop and ready for use..

4 SATARAID5 ARRAY MANAGER

4.1 OVERVIEW

The SATARAID5 Array Manager is the Graphical User Interfaces (GUI) which allows you to create and manage RAID volumes. The Manager initially shows two windows as seen below.



The RAID Groups window identifies SATA host adapters and configured RAID groups. For systems with more than one Silicon Image Host Bus Adapter installed, you can switch between cards by selecting the desired card in the RAID Groups Window.

When a controller is selected, the RAID Groups currently defined on that controller are also shown in the RAID Groups Window. Selecting a specific RAID Group will highlight the segments associated with that volume in the Device Configuration Window.

The Device Configuration window identifies all physical drives and their partitions.

Throughout the Manager, different colors are used to indicate the status of the components. The meanings of the colors are:

COLOR	STATUS
Green	Good. The component and all subcomponents are okay.
Yellow	Warning. This component or at least one subcomponent has become degraded and requires service.
Red	Failed. This component or at least one subcomponent has failed.
Grey	Unused.

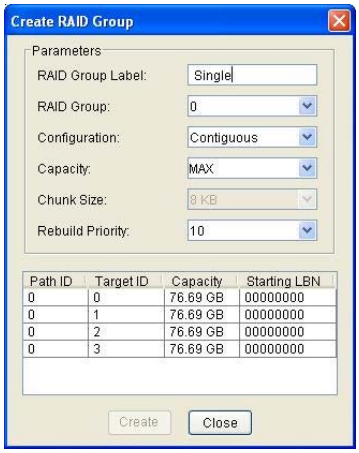
4.2 CREATING RAID GROUPS

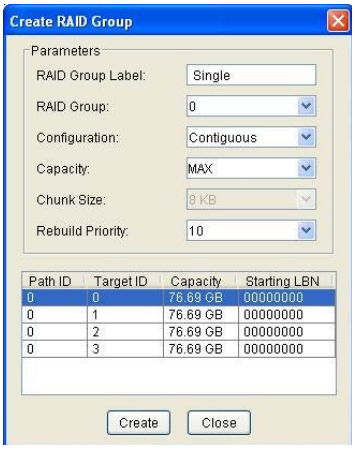
To begin creating a new RAID Group, select “Create RAID Group” from the RAID Group menu or right click on a controller in the RAID Groups window and select “Create RAID Group” from the pop-up menu. This will cause the Create RAID Group dialog to appear.

Note: The term “right-click” refers to using the secondary button on your mouse to perform the indicated operation. On a Windows system, use the mouse button that you have defined to be the secondary button (by default, that button is on the right side of the mouse, unless you have reconfigured the primary and secondary mouse buttons using Control Panel > Mouse). On a Macintosh system, press and hold the Command (Apple) key and click the mouse.

4.2.1 CONTIGUOUS RAID GROUPS

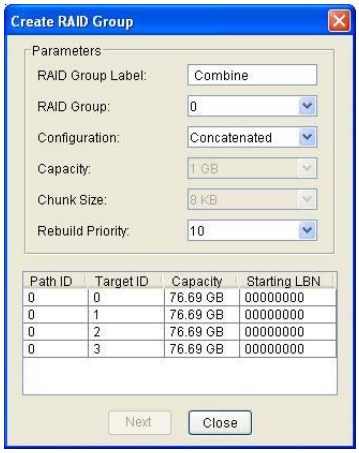
Contiguous RAID Groups allow the user to select a segment of disk drive or a disk drive. Select the disk and enter the desired values and press Create to create the RAID Group (Example below).

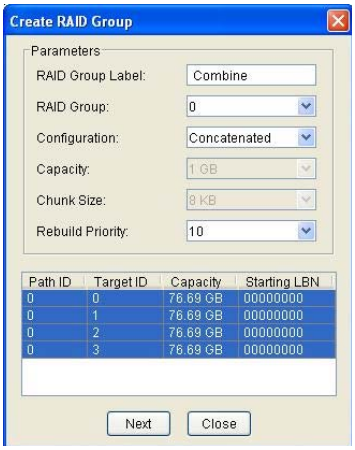


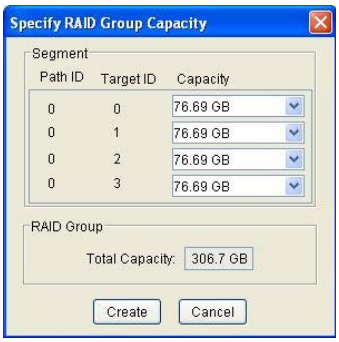


4.2.2 CONCATENATED RAID GROUPS

Concatenated RAID Groups allow the user to select different sized segments for each member of the volume. For Concatenated volumes only, a dialog box will appear allowing the user to select the individual segment sizes from each disk. Enter the desired values and press Create to create the RAID Group (Example below).

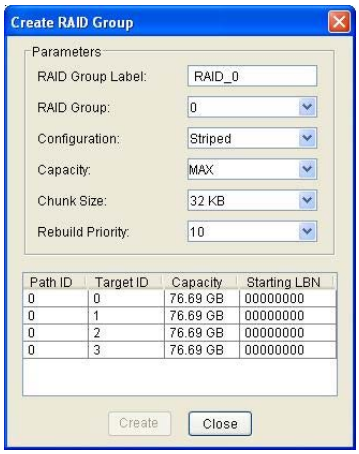


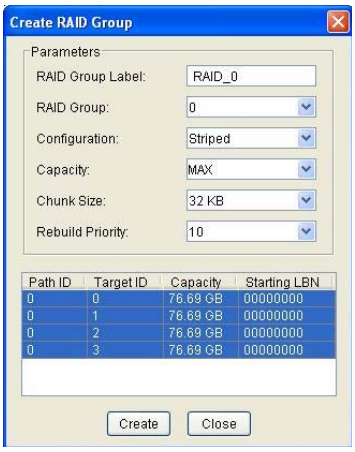




4.2.3 STRIPED RAID GROUPS

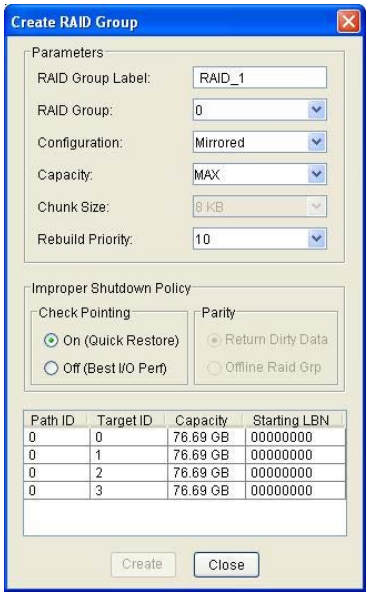
Striped RAID Groups allow the user to select minimum of 2 or more disks for each member of the volume. Enter the desired values and press Create to create the RAID Group (Example below).

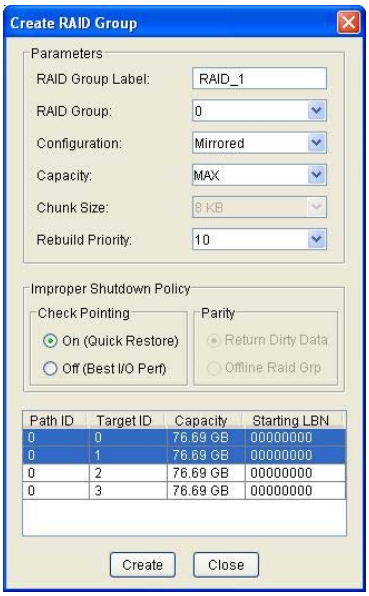




4.2.4 MIRRORED RAID GROUPS

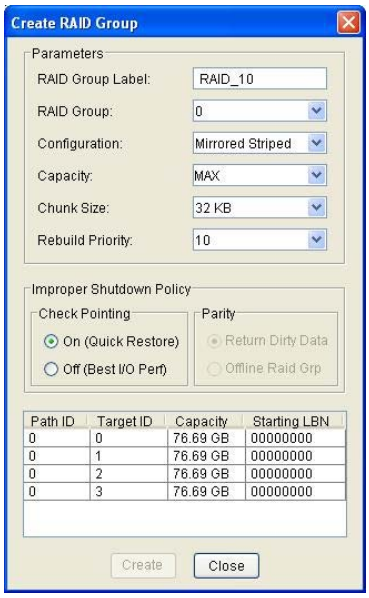
Mirrored RAID Groups allow the user to select 2 disks for each member of the volume. Enter the desired values and press Create to create the RAID Group (Example below).

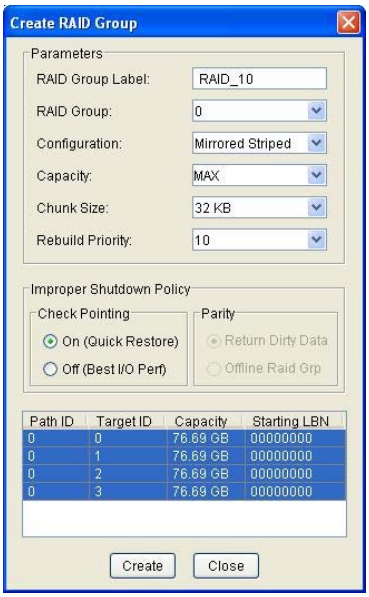




4.2.5 MIRRORED STRIPED RAID GROUPS

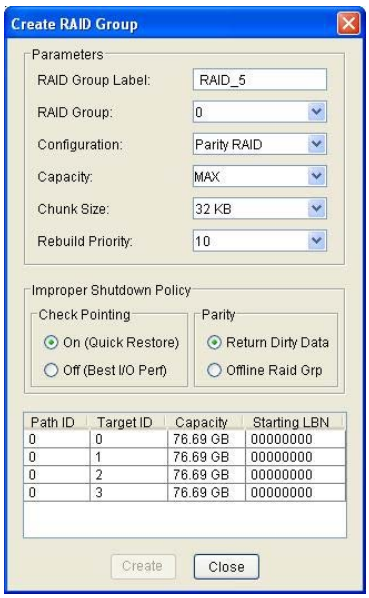
Mirrored Striped RAID Groups allow the user to select minimum of 4 disks for each member of the volume. Enter the desired values and press Create to create the RAID Group (Example below).

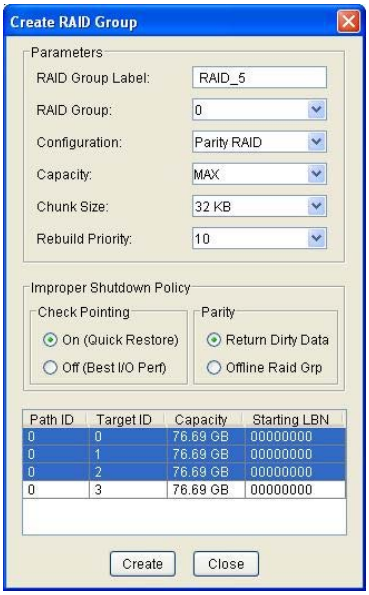




4.2.6 PARITY RAID GROUPS

Parity RAID Groups allow the user to select minimum of 3 or more disks for each member of the volume. Enter the desired values and press Create to create the RAID Group (Example below).





4.2.7 RAID GROUPS OVERVIEW

RAID Groups allow Enter values in all fields and click **Create** to create the RAID Group.

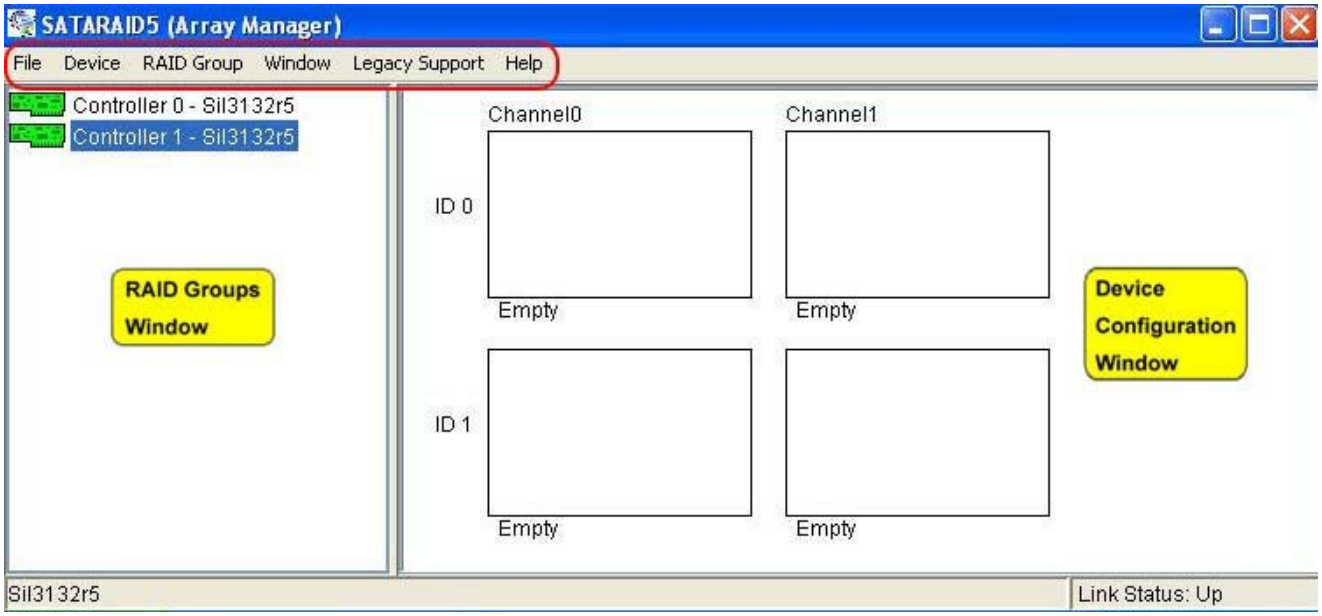
FIELD	DEFINITION
RAID Group Label	Enter an identifiable name for the RAID group. This value can be any string (up to 8 characters including blank spaces) to help users identify this volume.
RAID Group	Select a Group ID from the available ID list. The maximum number of RAID Groups per controller is 8, so Group ID can be any number between 0 and 7, inclusive.
Configuration	Select which RAID level is to be used to configure these members: • Contiguous (for virtual disk). • Concatenated (for multiple concatenated segments). • Striped (for RAID 0) • Mirrored (for RAID 1) • Mirrored Striped (for RAID 10) • Parity RAID (for RAID 5)
Capacity	Select a value to define the total usable capacity of the RAID Group or manually enter the volume size in gigabytes (GB). Selecting MAX will create the largest RAID set possible with the drive(s) selected.
Chunk Size	Select a value to define the chunk size (stripe size) for performance tuning. In general, large stripe sizes are best for large files that are accessed sequentially (for example, media streaming files) and smaller sizes are better for randomly accessed data like databases. This parameter is not used for Contiguous (JBOD), Concatenated, and Mirrored configurations.
Rebuild Priority	Select a value to identify how quickly the controller should rebuild data on a disk after a hardware failure. A value of 1 is the lowest priority and will take the longest to rebuild. A value of 10 is the highest priority and will rebuild the fastest, but may require more CPU resources, which might affect the computer's performance. This parameter is not used for Contiguous (JBOD), Concatenated, and Striped configurations.
Check Pointing	Click the On or Off button to enable or disable the Check Pointing feature. When Check Pointing is enabled, restoring data is very fast after an unexpected power loss, although normal performance may be slightly reduced. When Check Pointing is disabled, normal performance is improved, but restores can take a long time to complete. This selection is only available when the selected RAID configuration is Mirrored, Mirrored Striped or Parity RAID, and the "Advanced RAID Features" checkbox in the Configuration/Advanced Options dialog is checked.
Parity	Click the On or Off button to enable or disable the ability to return "dirty" data after an unexpected power loss and all of the data could not be written to disk, rather than taking the volume off-line. This selection is only available when the selected RAID configuration is Parity RAID and the "Advanced RAID Features" checkbox in the Configuration/Advanced Options dialog is checked.
Devices	Select the RAID member devices from the available device segment grid. Up to five members can be selected for Contiguous, Concatenated, Mirrored, Striped or Parity RAID modes (although Mirrored RAID Groups will typically contain only two members). Exactly four members must be selected for Mirrored Striped mode.

RAID Level	Min # of Disks
0	2
1	2
5	3*
10	4*
Contiguous	1
Concatenated	1

Once all parameters have been selected, select "Create" to create the RAID Group. When finished, press Cancel to exit the Create RAID Group Dialog.

* For 3132, this requires the use of a Port Multiplier device to access more than one disk per SATA channel.

4.3 ADDITIONAL MENU COMMANDS



The Main menu commands are shown below

File	Device	RAID Group	Window	Legacy Support	Help
Configuration…	Create Spare	Create RAID Group	Task Manager	Create Legacy RAID Group	Help Topics
Exit	Delete Spare	Rebuild RAID Group	Event Log	Rebuild Legacy RAID Group	About
	Delete Member	Delete RAID Group	Resources	Delete Legacy RAID Group	
	Delete Orphan	Bring RAID Group Online		Convert Legacy RAID Group	
	Make Pass-Thru	RAID Group Summary		Bring Legacy RAID Group Online	
	Device Summary			Create Legacy Spare	
				Delete Legacy Spare	
				Convert Legacy Spare	

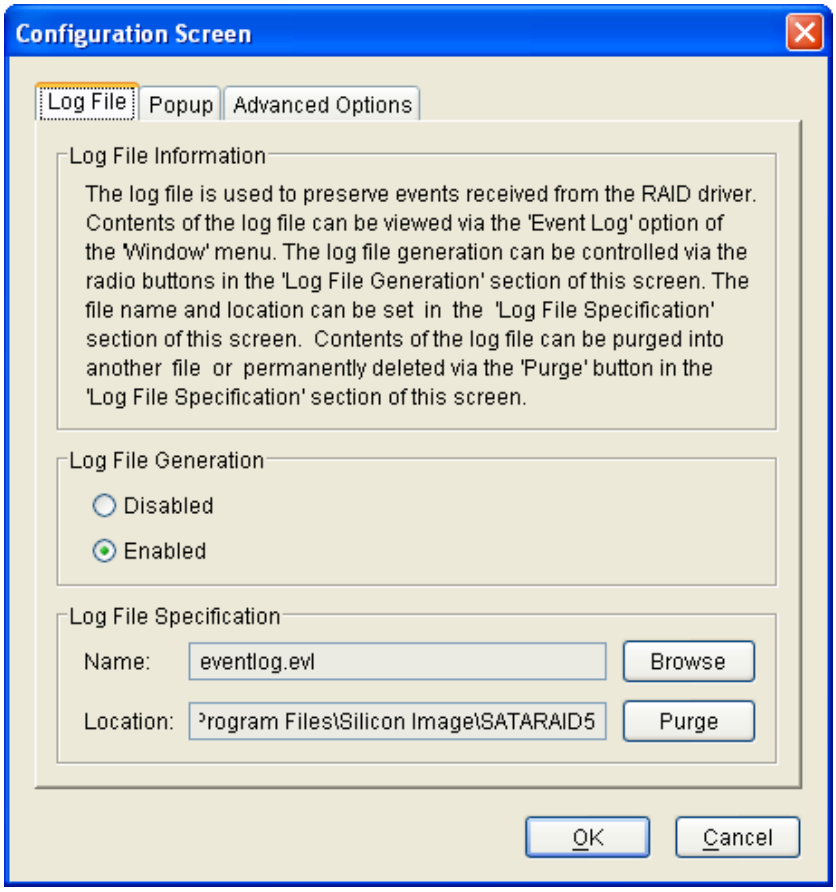
The commands are documented on the pages that follow.

4.3.1 CONFIGURATION

SATARAID5 configuration options include customization of the settings for **Log File**, **Popup**, and **Advanced Options**. This command displays a dialog box to let user set different configurations for SATARAID5 with the following three tabs:

Log File Tab

The Log File tab allows you to define the location and name of the log file. The log file is used to store event information received from all Silicon Image RAID drivers. The log file is a text file and can be viewed with any text viewer (such as “Notepad” on Windows platforms) or with the Event Log window of the SATARAID5 Manager. Use the Log File tab to set the location and the desired filename for the log file.

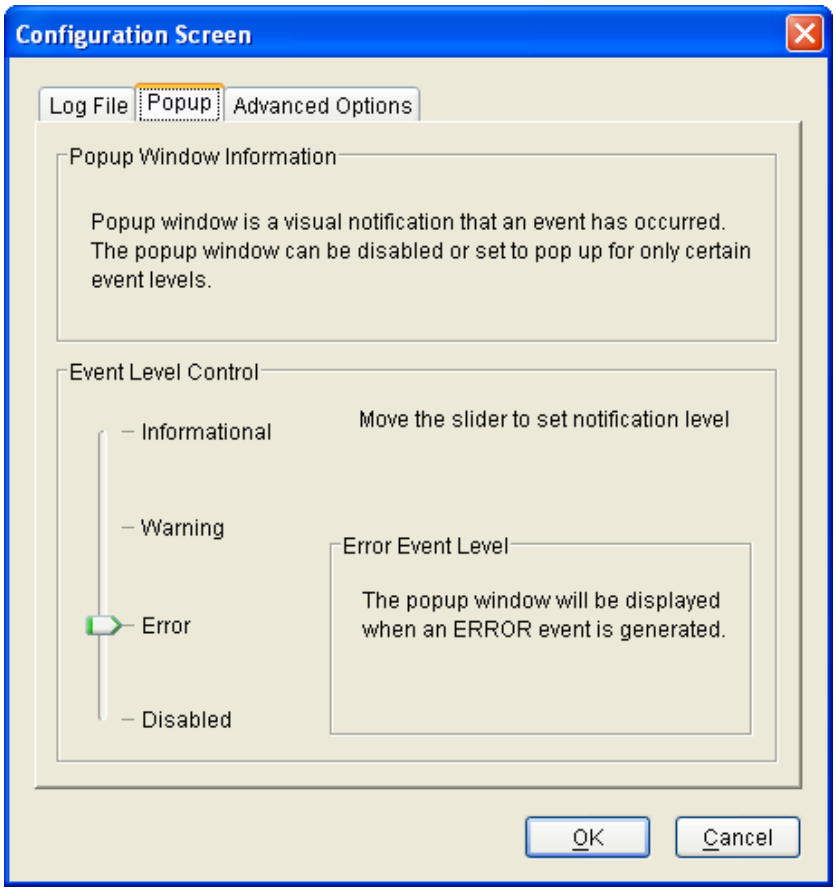

Configuration Screen
Log File
Popup
Advanced Options
Log File Information
The log file is used to preserve events received from the RAID driver. Contents of the log file can be viewed via the 'Event Log' option of the 'Window' menu. The log file generation can be controlled via the radio buttons in the 'Log File Generation' section of this screen. The file name and location can be set in the 'Log File Specification' section of this screen. Contents of the log file can be purged into another file or permanently deleted via the 'Purge' button in the 'Log File Specification' section of this screen.
Log File Generation
Disabled
Enabled
Log File Specification
Name:
eventlog.evl
Browse
Location:
rogram Files\Silicon Image\SATARAID5
Purge
OK
Cancel

To specify whether the Log File is generated, click on either the **Disabled** or **Enabled** radio button. If Log File generation is enabled, you can click the **Browse** button to specify the file name and location of the Log File. You can also use the **Purge** button to delete the contents of the Log File.

Popup Tab

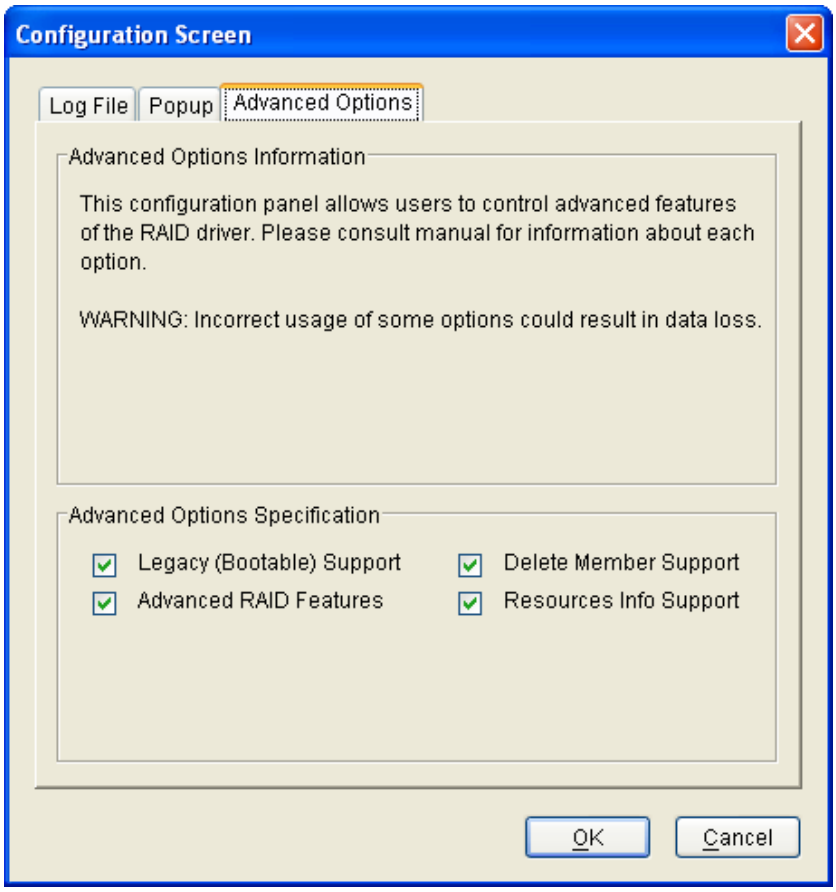
SATARAID5 can be configured to notify the user of events using messages in popup windows. Use the slider control to set the event level for popups to occur:

- Information Level - The following events will trigger a popup window:
  - ③ Informational
  - ③ Warnings
  - ③ Errors
- Warning Level - The following events will trigger a popup window:
  - ③ Warnings
  - ③ Errors
- Error Level - The following events will trigger a popup window:
  - ③ Errors
- Disable All - No events will trigger a popup window.


Configuration Screen
Log File
Popup
Advanced Options
Popup Window Information
Popup window is a visual notification that an event has occurred.
The popup window can be disabled or set to pop up for only certain event levels.
Event Level Control
Move the slider to set notification level
Informational
Warning
Error
Disabled
Error Event Level
The popup window will be displayed when an ERROR event is generated.
OK
Cancel

Advanced Options

The Advanced Options tab is used to control advanced features of the RAID driver. By default, all these advanced options are disabled.


Configuration Screen
Log File
Popup
Advanced Options
Advanced Options Information
This configuration panel allows users to control advanced features of the RAID driver. Please consult manual for information about each option.
WARNING: Incorrect usage of some options could result in data loss.
Advanced Options Specification
Legacy (Bootable) Support
Advanced RAID Features
Delete Member Support
Resources Info Support
OK
Cancel

The **Advanced Options** tab allows you to enable the following advanced features.

FEATURE	EXPLANATION
Legacy (Bootable) Support	When this feature is selected, Legacy Support menu will be available in the menu bar. Enables the Legacy Support menu to support RAID functions for legacy RAID groups (available on Windows platforms only). See Legacy Support menu options.
Delete Member Support	When this feature is selected, Delete Member menu item will be available under the Device menu. Enables the Delete Member option on the Device menu to delete a member from RAID 1 (Mirrored), RAID 5 (Parity RAID), and RAID 10 (Striped and Mirrored) groups. See Delete Member menu option.
Advanced RAID Features	When this feature is selected and user selects to create RAID group, if the RAID group to be created is fault tolerance group (RAID 1, RAID 5, or RAID 10), user will be able to select Improper Shutdown Policy in the Create RAID Group dialog box. Enables the selection of an Improper Shutdown Policy (including Check-Pointing and Dirty Parity handling) in the Create RAID Group dialog box when the selected RAID Group type is a fault-tolerant configuration (Mirrored, Mirrored/Striped and Parity RAID). This feature is not supported for Legacy RAID groups.
Resources Info Support	When this feature is selected, Resources menu item will be available under the Window menu. Enables the Resources option on the Window menu for debugging purposes. See Resources menu option.

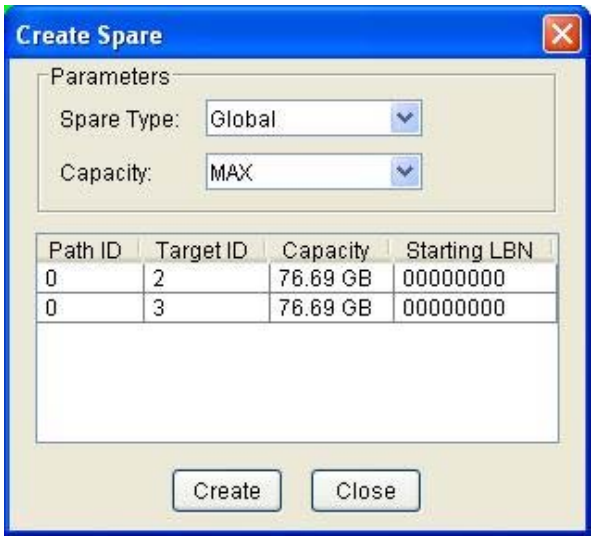
4.3.2 EXIT

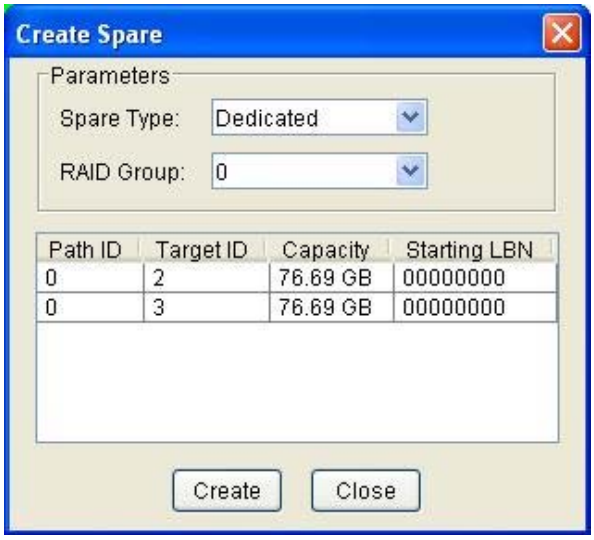
This command terminates the SATARAID5 program.

4.3.3 CREATE SPARE

This command displays a dialog box to let user create spare drive, user needs to select the following parameters:

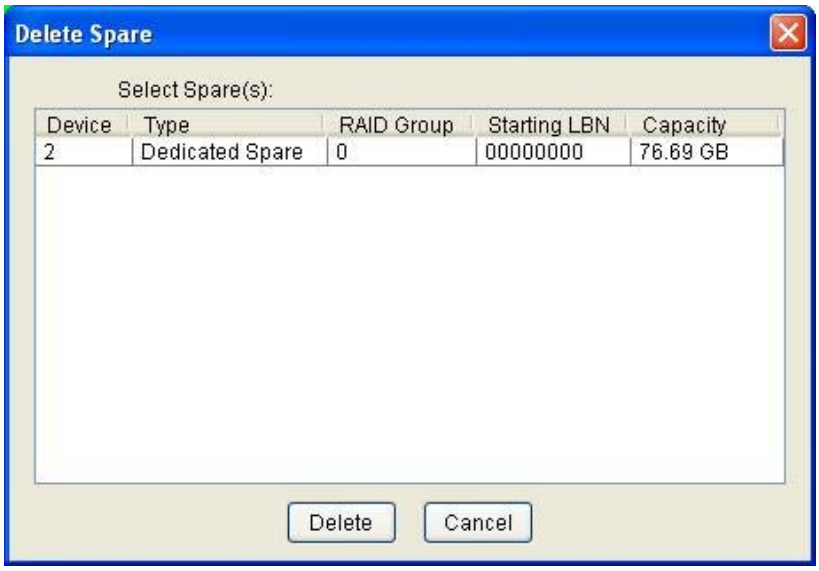
PARAMETER	DESCRIPTION
Spare Type	Choose one of: • Global - If the spare drive is for all RAID groups in the system. • Dedicated - If the spare drive is dedicated to the specified RAID group.
Capacity	If you select **Global** for the Spare Type, current options from a list of capacity are from 128 MB to 100 GB, HALF and MAX.
RAID Group	If you select **Dedicated** for the Spare Type, please selected RAID group to which this spare drive is dedicated.
Device Segment	Select one device segment from the available spare type only.





4.3.4 DELETE SPARE

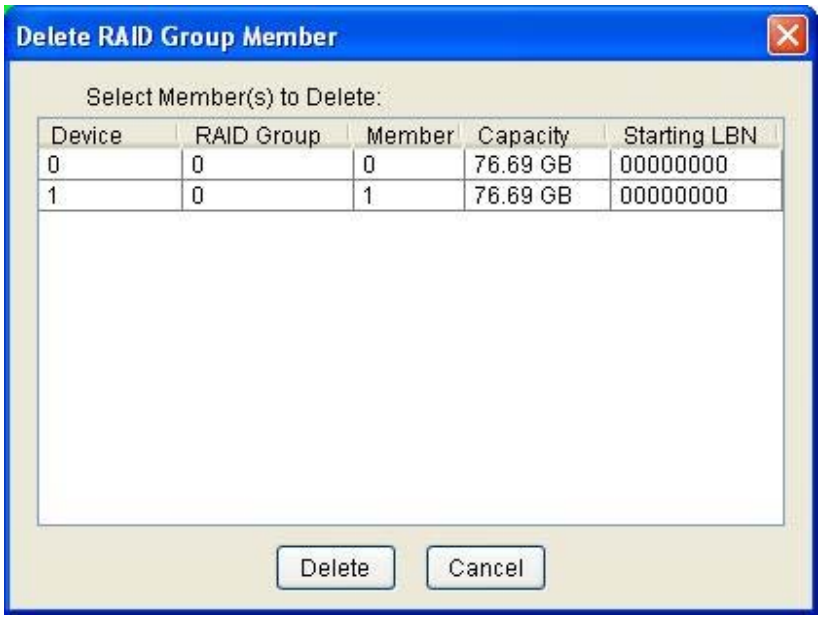
This menu option displays a dialog box to select (highlight) one or more spare drives to delete.



4.3.5 DELETE MEMBER

This menu option displays a dialog box to select (highlight) RAID group members to delete. Because RAID 0 is not fault tolerant, RAID 0 members are not shown in the list.

Note: Deleting members will demote the RAID group to a non-fault-tolerant RAID group.



4.3.6 DELETE ORPHAN

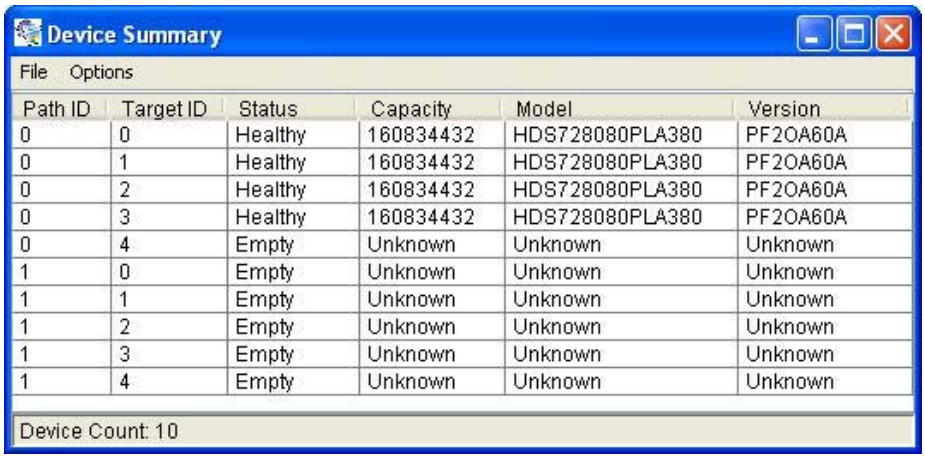
This menu option displays a dialog box to select (highlight) orphan segments to delete. An orphan segment is part of a RAID group that cannot access other segments within the same RAID group. When a member of a RAID group fails in a severe manner (such as a loss of power or a complete hard disk failure), it becomes an orphan. This command displays the Delete Orphan Segment window to show all orphan segments and allow user to delete selected orphan segments.

4.3.7 MAKE PASS-THRU

This menu option is not available in this product.

4.3.8 DEVICE SUMMARY

This command displays the Segment Summary window to show all physical devices' segments.


Device Summary
File Options
Path ID | Target ID | Status | Capacity | Model | Version
0 | 0 | Healthy | 160834432 | HDS728080PLA380 | PF2OA60A
0 | 1 | Healthy | 160834432 | HDS728080PLA380 | PF2OA60A
0 | 2 | Healthy | 160834432 | HDS728080PLA380 | PF2OA60A
0 | 3 | Healthy | 160834432 | HDS728080PLA380 | PF2OA60A
0 | 4 | Empty | Unknown | Unknown | Unknown
1 | 0 | Empty | Unknown | Unknown | Unknown
1 | 1 | Empty | Unknown | Unknown | Unknown
1 | 2 | Empty | Unknown | Unknown | Unknown
1 | 3 | Empty | Unknown | Unknown | Unknown
1 | 4 | Empty | Unknown | Unknown | Unknown
Device Count: 10

The Segment Summary window has its own menu bar. All options available via the menu bar are shown below

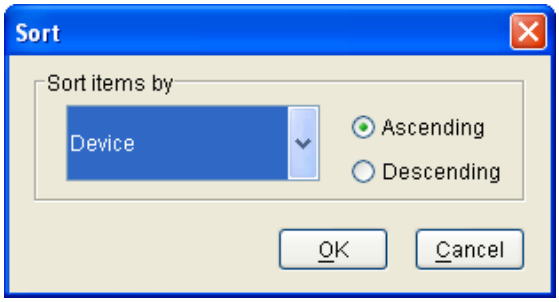
File	Options
Exit	Sorting…
	Fields…

Exit

This command closes the Task Summary window.

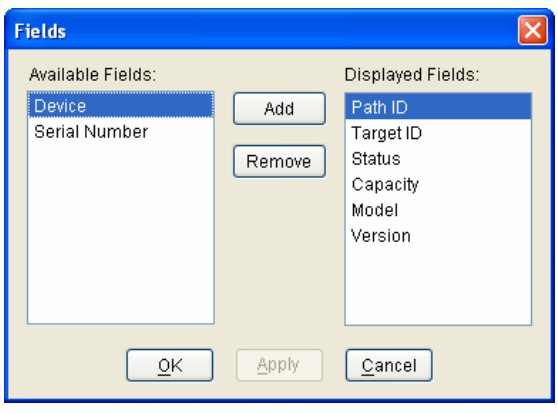
Sorting

This command sorts the rows based on the selected field.



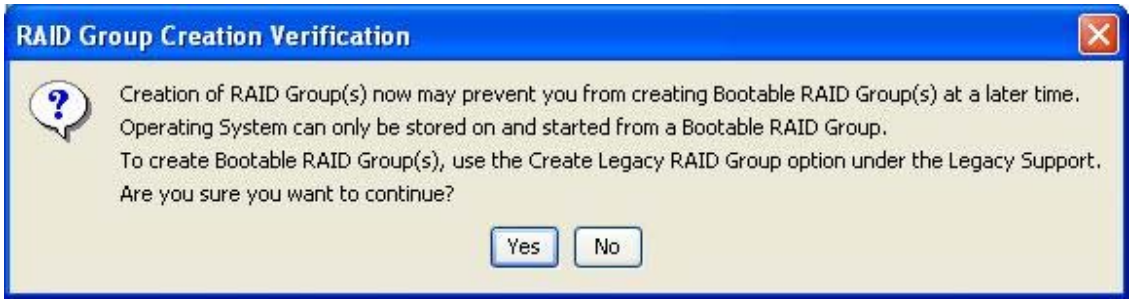
Fields

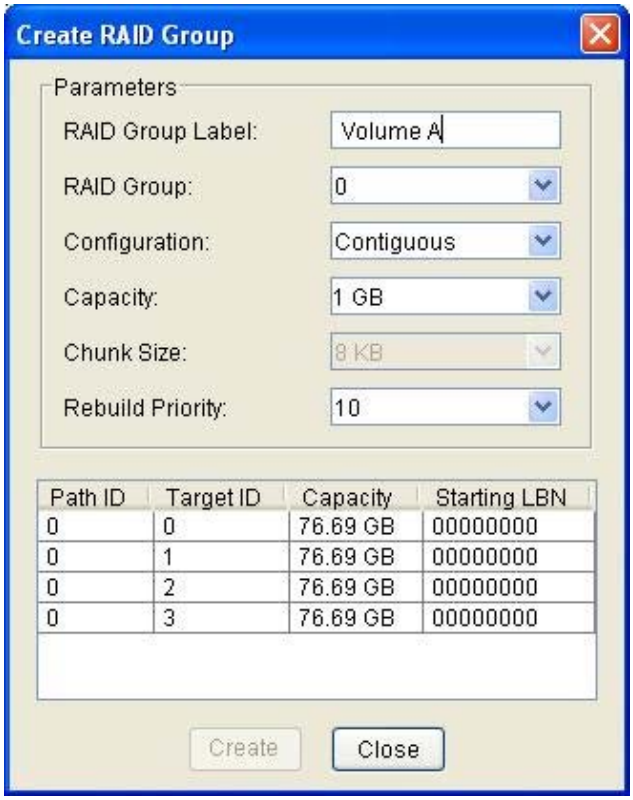
This command displays a dialog box to let user choose which fields will be shown in the Segment Summary window.



4.3.9 CREATE RAID GROUP

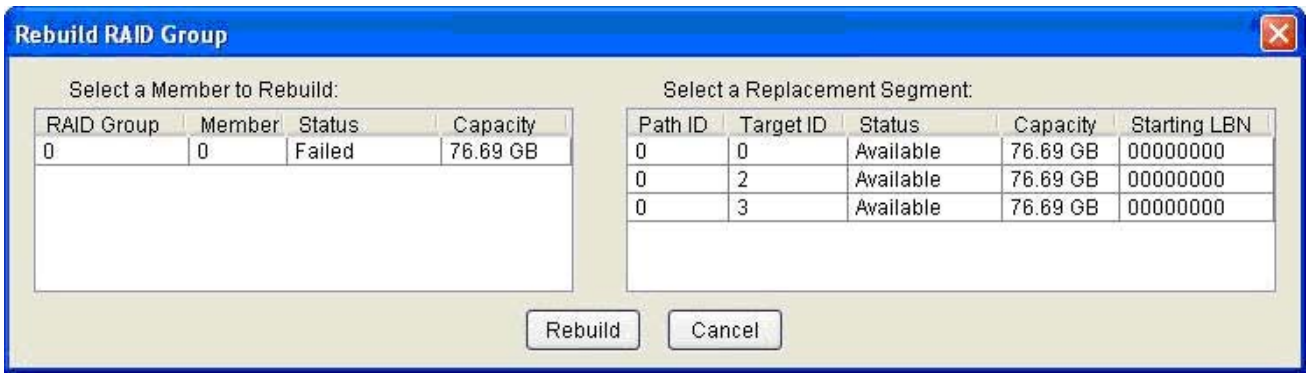
This command displays a dialog box to let user verify a raid type than display Create RAID Group dialog box.


RAID Group Creation Verification
Creation of RAID Group(s) now may prevent you from creating Bootable RAID Group(s) at a later time.
Operating System can only be stored on and started from a Bootable RAID Group.
To create Bootable RAID Group(s), use the Create Legacy RAID Group option under the Legacy Support.
Are you sure you want to continue?
Yes
No



4.3.10 REBUILD RAID GROUP

This command displays a dialog box to let user choose a replacement segment to rebuild a non-fault tolerant RAID group.


Rebuild RAID Group
Select a Member to Rebuild:
RAID Group Member Status Capacity
0 0 Failed 76.69 GB
Select a Replacement Segment:
Path ID Target ID Status Capacity Starting LBN
0 0 Available 76.69 GB 00000000
0 2 Available 76.69 GB 00000000
0 3 Available 76.69 GB 00000000
Rebuild
Cancel

4.3.11 DELETE RAID GROUP

This command displays a dialog box to let user choose RAID groups to delete.

4.3.12 BRING RAID GROUP ONLINE

This menu option is not available in this product.

4.3.13 RAID GROUP SUMMARY

This command displays a dialog box to show all RAID groups' group ID, configuration, and status.

The RAID Group Summary window has its own menu bar. All options available via the menu bar are shown below.

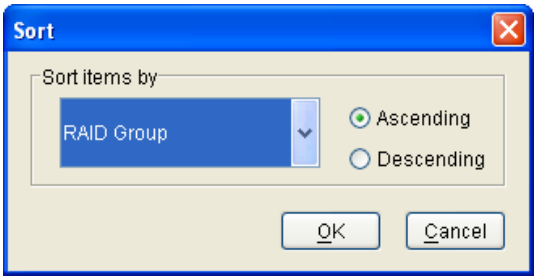
File	**Options**
Exit	Sorting…
	Fields…

Exit

This command closes the RAID Group Summary window.

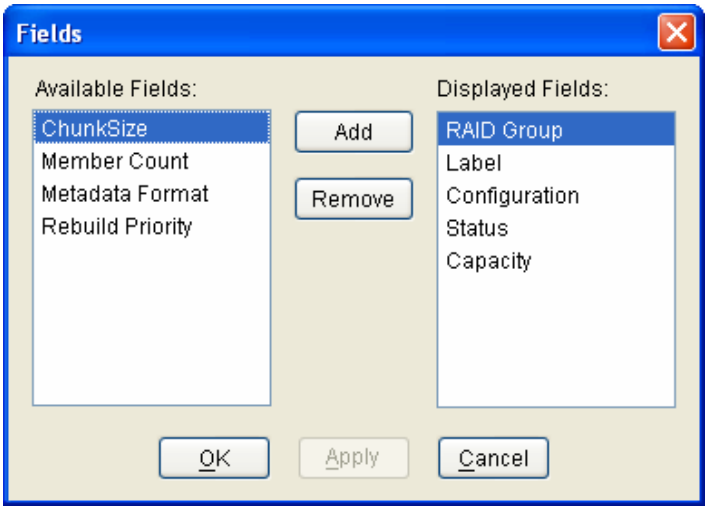
Sorting

This command displays a dialog box to let user choose up to 3 items to sort RAID group items in the RAID Group list.



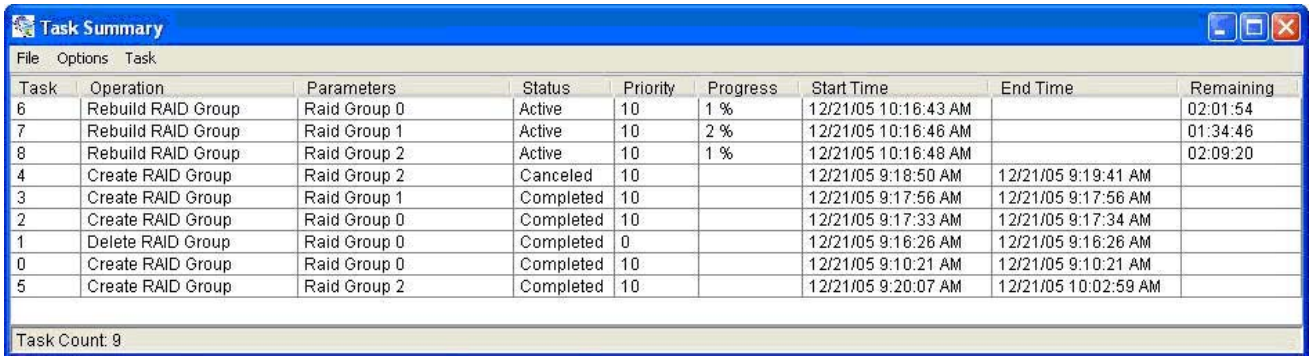
Fields

This command displays a dialog box to let user choose which fields will be shown in the RAID Group Summary window.



4.3.14 TASK MANAGER

This command displays the Task Manager window. The Task Manager window lists all RAID and disk management tasks that have been started and/or done. This window provides user the ability to schedule any RAID and disk management operations including RAID group creation, rebuild, and test.



Task	Operation	Parameters	Status	Priority	Progress	Start Time	End Time	Remaining
6	Rebuild RAID Group	Raid Group 0	Active	10	1 %	12/21/05 10:16:43 AM		02:01:54
7	Rebuild RAID Group	Raid Group 1	Active	10	2 %	12/21/05 10:16:46 AM		01:34:46
8	Rebuild RAID Group	Raid Group 2	Active	10	1 %	12/21/05 10:16:48 AM		02:09:20
4	Create RAID Group	Raid Group 2	Canceled	10		12/21/05 9:18:50 AM	12/21/05 9:19:41 AM	
3	Create RAID Group	Raid Group 1	Completed	10		12/21/05 9:17:56 AM	12/21/05 9:17:56 AM	
2	Create RAID Group	Raid Group 0	Completed	10		12/21/05 9:17:33 AM	12/21/05 9:17:34 AM	
1	Delete RAID Group	Raid Group 0	Completed	0		12/21/05 9:16:26 AM	12/21/05 9:16:26 AM	
0	Create RAID Group	Raid Group 0	Completed	10		12/21/05 9:10:21 AM	12/21/05 9:10:21 AM	
5	Create RAID Group	Raid Group 2	Completed	10		12/21/05 9:20:07 AM	12/21/05 10:02:59 AM	

The Task Manager window has it's own menu bar. All options available via the menu bar are shown below

File	Options	Task
Open…	Sorting…	Modify…
Save…	Fields…	Suspend…
Print…		Resume…
Exit		Cancel…
		Delete…

Open

This option will be available in future revisions.

Save

This option will be available in future revisions.

Print

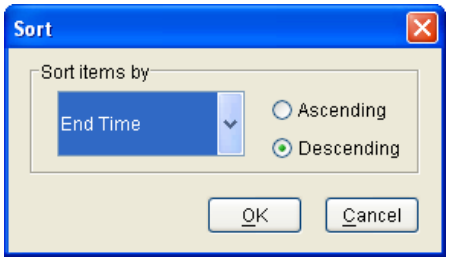
This option will be available in future revisions.

Exit

This command closes the Task Summary window.

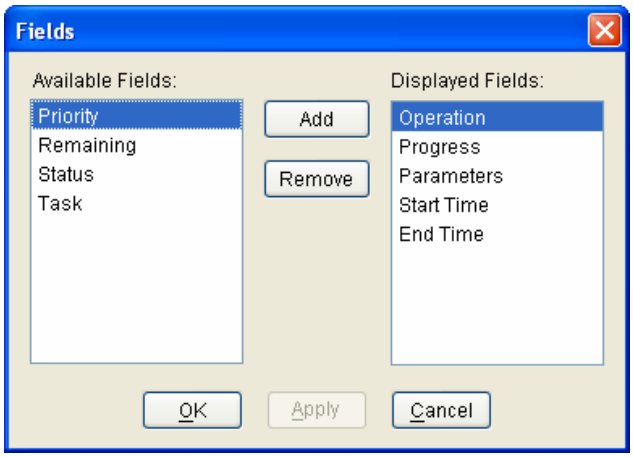
Sorting

This command displays a dialog box to let user choose up to 3 items to sort task items in the task list.



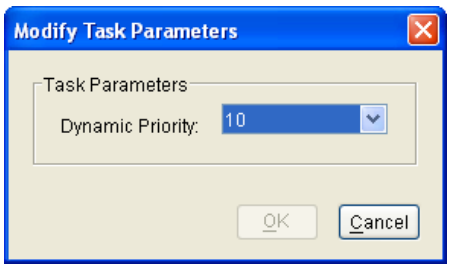
Fields

This command displays a dialog box to let user choose which fields will be shown in the task list.



Modify

This command allows user to modify parameters of the selected task items. The following is an example of changing rebuild priority for a rebuild task.



Suspend

This command allows user to suspend the selected task items.

Resume

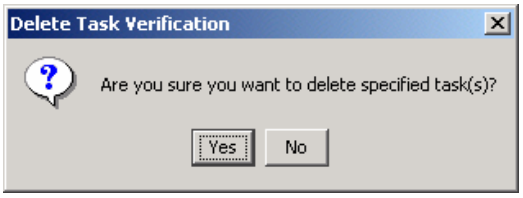
This command allows user to resume the suspended task items.

Cancel

This command allows user to cancel the selected task items.

Delete

This command displays a dialog box to let user delete the selected task items from the task list in Task Summary window. The following dialog box will pop up to get confirmation from the user.



4.3.15 EVENT LOG

This command displays the Event Log window. The Event Log window displays SATA device-related events that occur while SATARAID5 is running.

Event Log
File Options
EventDate EventTime EventSource EventType EventLevel EventMessage
12/21/05 08:53.22 AM Controller 0 - Sil3132r5 Controller Informational Begin group discovery
12/21/05 08:53.22 AM Controller 0 - Sil3132r5 Controller Informational Initialization Complete
12/21/05 08:53.53 AM Controller 0 - Sil3132r5 Application Informational Database initialized..
12/21/05 09:10.21 AM Controller 0 - Sil3132r5 Device Informational Segment created, PathId 0, TargetId 0, PBN 00000000, Capacity 09962380, Segment Count 1
12/21/05 09:10.21 AM Controller 0 - Sil3132r5 Device Informational Segment created, PathId 0, TargetId 1, PBN 00000000, Capacity 09962380, Segment Count 1
12/21/05 09:10.21 AM Controller 0 - Sil3132r5 RAID Informational Start Create, Group 0
12/21/05 09:10.21 AM Controller 0 - Sil3132r5 RAID Informational Configure RAID Group task
12/21/05 09:14.04 AM Controller 0 - Sil3132r5 Device Error Device Removed at PathId 0, TargetId 0
12/21/05 09:20.07 AM Controller 0 - Sil3132r5 Device Informational Segment created, PathId 0, TargetId 1, PBN 05000000, Capacity 02800000, Segment Count 3
12/21/05 09:20.07 AM Controller 0 - Sil3132r5 Device Informational Segment created, PathId 0, TargetId 2, PBN 02800000, Capacity 02800000, Segment Count 2
Event Count:11

The Event Log window has it's own menu bar. All options available via the menu bar are shown below

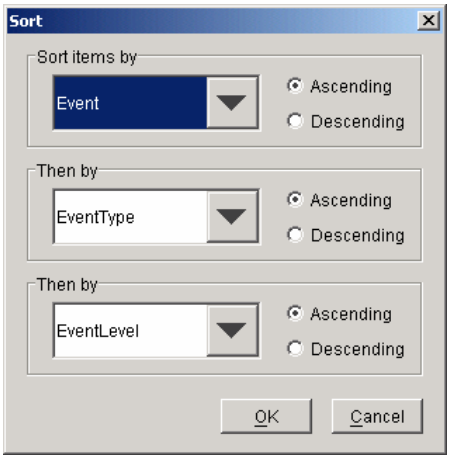
File	**Options**
Exit	Sorting…
	Fields…

Exit

This command closes the Event Log window.

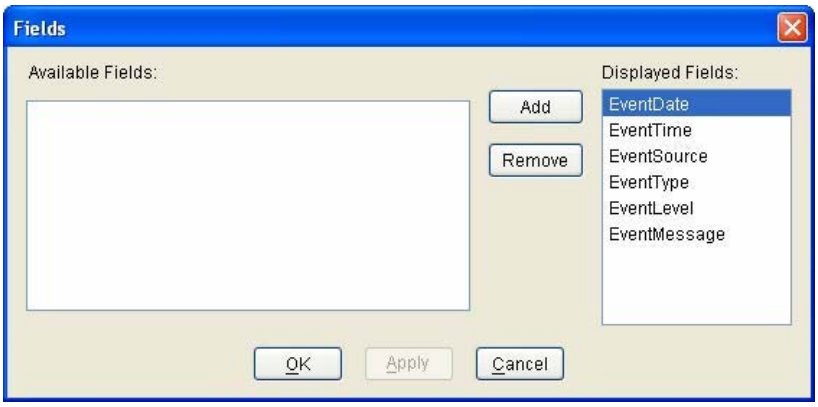
Sorting

This command displays a dialog box to let user choose up to 3 items to sort event items in the event log.



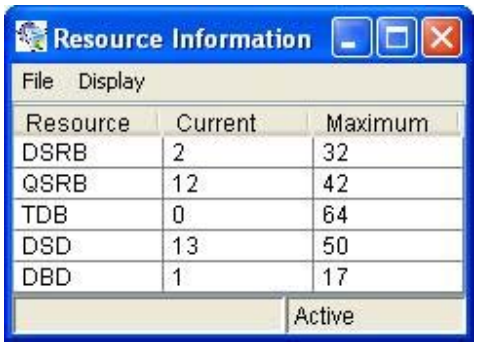
Fields

This command displays a dialog box to let user choose which fields will be shown in the event log.



4.3.16 RESOURCES

This command displays the Resource Information window. This feature is for debugging purpose only.



The Event Log window has it's own menu bar. All options available via the menu bar are shown below

File	Display
Exit	Suspend
	Resume

Exit

This command closes the Resources window.

Suspend

This command is to suspend the resources informantion.

Fields

This command is to resume the resources informantion.

4.3.17 CREATE LEGACY RAID GROUP

This menu option is not available in this product.

4.3.18 HELP TOPICS

This command opens an interactive help dialog using the standard Windows help interface.

This option will be available in future revisions.

4.3.19 ABOUT

This command displays a dialog box with more information about the SATARAID5 program, including the revision level.